

Artificial Limbs
DUPLICATIONS

GM Electrotype

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STEPS.



BY B. FRANK. PALMER, LL. D.

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Film 8311, Item 1

AMPUTATION.



HOW AN AMPUTATED LIMB HEALS.

An examination of a section of a bone of the leg shows two kinds of tissues combined in the composition, one of which is dense and compact in texture, like ivory, and the other open and spongy. The compact tissue is always on the exterior, and the spongy tissue is always internal. The femur, tibia and fibula (bones of the thigh and leg) are made up mostly of spongy tissue with a surface of compact substance. These bones are filled with innumerable minute blood-vessels.

When a bone is divided by amputation these arteries throw out a plastic substance, which perfectly *seals over and rounds* the end that remains. This secretion, at first an albuminous exudation, soon toughens into cartilage, and then ossifies completely, forming a rounded end of polished bone, of the same texture as the outer tissue of the shaft. Over the smooth end of the bone a perfect covering of tough fibrous membrane, the periosteum, unites completely and forms a perfect shield. Then the integuments, muscles and skin unite, each to its kindred substance, to complete the work of Nature in really *healing* the end of her mutilated member. Even in amputations of a questionable kind, without flaps, when the new covering has been formed by granulation, I have found that the rounded end of the bone, protected in its fibrous *coat of mail*, the periosteum, and covered with the new-made skin, is capable of sustaining the weight of the person with perfect safety and comfort in the *safety-socket*.

THE END THE TRUE POINT OF SUPPORT.

The *end* of a bone, after an amputation, becomes as complete if in the shaft as when cut through an articulation according to Syme's method. In use, the periosteum and integuments thicken over the end of the bones, and the stump spreads and toughens like a knuckle inured to toil. The effect is to produce a kind of flattened ball in the membranous sack, which is firm and indestructible. The rounded bones rest as securely in this sack as the *os calcis* in the covering of the heel. Thus Nature carefully *completes* her work. Then, if the surgeon has done his work as well, there is a perfect cushion of muscles, tissues and integuments, sealed in a complete skin, with only a scar on the outer surface. A good flap is, of course, an advantage.

The periosteum forms a partition between the end of the bone and the outer natural coverings, which all unite completely as each substance seeks union with another of similar texture, and if it does not find analogous particles in immediate contact, they are generated and thrown out to form a perfect union, and prepare the end for use.

Now, it is seen that the end of the bone becomes perfectly rounded and smooth. The periosteum unites over it, sealing it indestructibly; then *muscle joins muscle, tissue meets tissue, skin unites with skin*, each closing in its natural order, and *all combining to form a sound point of support*. Use only is wanting to restore a natural feeling under pressure, and toughen the end of the *stump*, as it does the *foot*.

Here is a solution of the troublesome problem—the *point of support*; and here may disappear all fears of resting on the *end of a stump*, if set in a *suitable socket*. Persons who once feared to touch the end, now put their weight on it, and, standing thus, lift two hundred pounds. Some, at will, move all the muscles about the end of the stump freely, like toes, and the sensation is the same as that of moving the natural toes—exceedingly pleasant after long want of use.

It is only necessary now to reverse the old belief that it *cannot*, and know it *can* be done. In the safety-socket a person experiences the sensation of *walking* instead of *going*, and of *standing naturally* in a support which feels so much like a soft boot on the sound foot as to cause one to almost fancy the lost member regained.

B. F. P.

THE OLD AND THE NEW PALMER LEG.

FROM 1846 TO 1874.

In the year 1873, after patenting the very valuable improvements on my original invention, I sent a POSTAL CARD to such of my old patients as I presumed it would reach among my *very first patrons*. The following communication was on the back of the little CARD, viz.:

Philadelphia, Dec., 1873.

DEAR SIR:

Remembering you as one of my first patrons, I now mail this CARD to announce a very important invention:—A NEW PATENT LEG with improved mechanism, and a Safety-Socket, which enables a person to walk upon the end of the stump with perfect comfort and naturalness.

The Patent Elastic Socket feels much like a soft shoe on the sound foot. It prevents all pulling of the skin over the end; and, by bringing all the muscles into natural action, removes the nervous, unnatural feeling of a tender stump, and toughens the end (as use hardens the sole of the foot), thus producing the happiest effect.

Truly, your friend,

B. Frank. Palmer.



Walking in Safety-Socket.

To this CARD I received numerous and gratifying replies from many of my early patients, some of whom I supplied in 1846, the year I took the original patent.

I will here give a few interesting facts concerning the progress in the Art, first stating that I am now proceeding with the *new* invention in the case of the *first patient I ever had*, whose leg I made, *with my own hands*, in June 1846. This gentleman is, I am happy to say, in excellent health and prosperity, which have attended him during the twenty-eight years in which he has worn the Palmer leg; he has had to purchase only three legs in all that time; the first one, after some fifteen years, was placed into my hands, on applying the duplicate; the second is not worn out, and the third, in excellent condition, *is now in use*. Not one of these legs made

for my first patient has been fully worn out, and *two* of the *three* remain in sound condition. One may be seen in use in Winterset, Iowa, the other at my office in Philadelphia. No leg-maker has been able to induce this man even to *try* any of their various patents, though he has never been in any way employed, or *paid anything, by me*. I found him so set in his opinion in 1873, that it was difficult to convince him that *I* had made or could make an improvement. But a man in his town, who had worn my leg ten years, and who also thought it could not be improved, came on in December 1873, to get a leg, and to examine the new Patent. This man told me that he *and my first patient* "had talked the matter all over," and while they were satisfied that the old Patent leg was perfect, yet, *in their cases, at least*, with short and tender stumps, they could not support their weight on the end, and the Patent Safety-Socket would not apply. This fact they had fully settled, and so he wanted another of the original Patent legs, and "would think about the new Patent." But on seeing *what it was* and *how it applied*, he concluded to try the new Patent, which at once astonished him on trial, and he went back with such a report as caused *my original patron* to apply for the new leg. These two gentlemen joined in sending a friend of theirs to me for the new leg, and I refer to them all, to-wit: Albert D. Taylor, (who had the first leg in 1846), W. C. Newlon, and P. B. Sprague, Esqs., Winterset, Iowa. The success in Mr. Sprague's case is wonderful.

In these cases, below the knee, the reader will notice the peculiar nature and value of the testimony, showing the great worth of the original Palmer leg, and the certainty of the great improvements now made, as witnessed by the most competent judges, who have an experience equalled by few who have lost limbs, and who did not believe the new method possible till it was tried.

Just at this point, as I write, February 25th, the carrier brings the following letter from a gentleman of worth and distinction—himself the inventor of the Palace Car, known as "Pullman's." Mr. F.'s amputation is above the knee.

WATERLOO, N. Y., February 24, 1874.

DR. B. FRANK. PALMER,

DEAR SIR:—The new leg with Patent Socket arrived safe, and I am now wearing it. No one but *you* could ever have prevailed upon me to rest my weight on the end of my stump.

I was always nervous about it, and fearful of the least pressure; but after a personal explanation by you of the way in which Nature had kindly done her work, all doubt and fear banished.

You will remember I have worn your *first invention* for over twenty years, and considered that the *acme* of perfection. The *new socket* is a *great success*, and places your name high among the benefactors of mankind, who have devoted their lives to the benefit of suffering humanity.

The muscles, so long dormant in my leg, begin to feel as if they reached the foot; the warm blood seems to again tingle in the toes, and the old sensations, long forgotten, again resume their sway. The mechanism is as near perfection as human ingenuity can suggest, combining, as it does, lightness with great strength and durability, while the beautiful finish and natural appearance are not excelled by the sculptor's art.

Very truly yours,

F. H. FURNISS.

The little POSTAL CARD reached a gentleman whom I first saw in 1849, walking on his knees *on the ground* towards my office, then in New England.

The following letters from him after using a *pair* of Palmer legs twenty-five years will interest the reader:

ELK HORN, WIS., APR. 2, 1850.

B. FRANK. PALMER,

DEAR SIR:—In compliance with my promise, I now write you concerning the utility of my artificial legs. I have worn them about one year, and do not leave them off at all. I wore them to New York last spring, also in the fall, and passed quite unnoticed. I walk straight, and without limping at all.

They place me again at the usual height of other people, and I would not do without them for any consideration.

Yours truly,

B. B. DAVIS.

ELK HORN, WISCONSIN, January 7, 1874.

DEAR SIR:—Your Postal Card was received a few days ago, and I was much pleased to learn that you were still in the



B. B. Davis, 1849.

business. I remain in the dry-goods business, and shall be sixty-four years old to-morrow. I have worn the pair of legs since you made them in 1849; I think you only made one pair before. *The legs yet remain good.* I would be much obliged to you for a book so that I could see the improvements, although the old legs do very well, and will probably last longer than I shall. They have been to me surely a great blessing, and I hope that every person wearing your legs feels as thankful for the invention as I do, and for which I return you my thanks and good wishes.

Yours truly,

B. B. DAVIS.

To B. FRANK. PALMER, LL.D.

ELK HORN, WISCONSIN, February 28, 1874.

DEAR SIR:—Your favor of the 23d is received, in which you cite me to cases like mine. I have given you full particulars and will send measures, and draft for payment, having confidence in the result.

Yours truly,

B. B. DAVIS.

Other similar letters have been received from my old patients who, with Mr. D., are now about purchasing the new leg. I am surprised to find that many legs made by me from twenty to twenty-five years ago are still in good condition; several persons who got them from me about that time, write now that they have worn them ever since, and are not yet compelled to get new ones, but will when theirs *are worn out*. I am aware that this sounds like exaggeration, and here refer any applicant to the men who have the legs in use so long. But, it is true that laboring men often wear them out in much less time, and a new leg once in five years has been wisely settled upon by Congress for the United States soldiers and sailors. This is a reasonable time for a leg to remain *good*. Limbs were last supplied to United States soldiers and sailors on United States account in 1870, and will be again in 1875. Applications may now be filed.

Only in exceptional cases can it be supposed that any artificial leg will last twenty or twenty-five years, still, I give the exact facts for what they are worth, in showing the possibilities for those who cannot get new legs often. I may remark that I have personally worn but two Patent legs in twenty-five years, and that both of these are still perfectly

good for service. I now leave them off only for the new Patent, with Safety-Socket, to walk on the end of my stump. My knee has been bent and stiff until last season, for thirty-eight years, as I have before stated in an article giving an account of the circumstance which caused me to make the new invention, and discover the great principle so long unfound in artificial locomotion.

One of the Postal Cards before mentioned was sent to the address of a venerable clergyman, the Rev. Silas McKeen, D. D., of Bradford, Vermont, a town in which a boy lost a leg in the year 1834. Although the reverend gentleman had not, I am glad to say, himself met with the loss in question, I remembered him as the Pastor of a Church in the village where the boy had, long ago, met with disaster, and I knew the kind man, if living still, would feel an interest in the subject of a misfortune which forty years ago had doubtless awakened his sympathy. I had never spoken or written to the Rev. Doctor, to my knowledge, and superscribed the card with peculiar emotion,—with only a *hope* of its reaching him. The following letter from this gentleman, and the added article of Prof. Oliver Wendell Holmes, may be my apology for departing from a fixed rule which I have adhered to in the past—not to mention my personal loss when it could well be avoided. I now allow my valued friends to say for me what I have not myself wished to mention in twenty-seven years of business. The reader will now notice how it happened that the Palmer leg was originally invented.

I have been told that a little autobiography would please the reader. I do not wish to write it, but, instead, permit the republication of a little biography mingled with a little Vermont history, written before I had any knowledge of the fact that the catastrophe of my boyhood-life had been published in historic form as the event, which, under Providence, had been made to appear as the highest life-blessing “in disguise.”

BRADFORD, VERMONT, December 17, 1873.

B. F. PALMER, LL.D.

DEAR SIR:—Thanks to you, dear sir, for your Postal Card, recently received, and also for the specimen sheets, or pages rather, from the forthcoming book. If you should see fit to send me a copy, I will be much obliged, and as I may

have opportunity will endeavor to have it used here, according to your intentions in its publishment.

As it was in this place that you, long ago, met with the painful disaster so wonderfully overruled for not only your own good, but for that of many others, not only in this but other countries, I have felt a deep interest in your prosperity and happiness, though I never before had any correspondence with you.

I am an old man now, eighty-two years of age, but by request of this town, and that of many individuals, have been for some time engaged in writing a HISTORY OF BRADFORD, not yet finished, in which I have taken the liberty to make some allusions to yourself. Having spoken of the establishment in which you suffered the loss, I say, "After the lapse of many years, the fire seized the old Tannery with all its various appurtenances and so thoroughly swept them away that scarcely a vestige now remains. But one thing I wish to say in regard to that old establishment: while a fine boy was one day superintending the grinding of bark there, he, by some mistake, got his foot where the bark should be, and was thus crippled for life. But the loss of his foot awakened his ingenuity to supply as far as possible the want, and led to the making of artificial limbs so superior to any before known, as to bring him high renown not only in America but Europe, and wherever the name of PROFESSOR PALMER is known. Thus a serious calamity proved to be a blessing in disguise."

I should be glad to know how old you were at the time the event happened, where was your native place, and when you first commenced the manufacture of limbs, &c. Perhaps your book may have a bit of autobiography in it, I hope so.

Be assured, dear sir, of my kindest regards.

Yours truly,

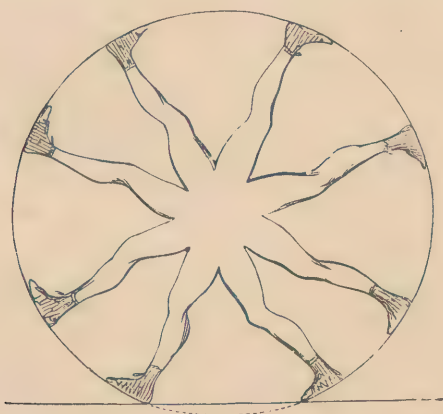
SILAS McKEEN.

Upon first reading what Dr. McKeen had written long before I had any knowledge of the fact that he had been making history of the little story of my early misfortune, (which I had refrained from telling, and had hoped might not survive the Tannery), I knew not how to thank the author for an act of almost mystical kindness in making so honorable mention, while telling the tale I had concealed, as to render

it no longer unpleasant. I would not now, however, even in my valued friend's choice language, allow myself to repeat the story, if I did not, with him, recognize the Recording Angel's hand, moving his own in tender sympathy. But I am compelled to look from present and happy effects, far back to their remote causes, long unsuspected, and bear witness in my own person to a comfort long unknown, and still a mystery not understood (because not felt), by many thousands of sufferers whose mutilated limbs have taken chronic and abnormal conditions, causing painful sensibilities—all for want of proper surgical advice and correct mechanical treatment based upon a knowledge of Nature's laws.

(ABSTRACT)

THE HUMAN WHEEL—ITS SPOKES AND FELLOES.*



BY PROFESSOR OLIVER WENDELL HOLMES.

(Published in the Atlantic Monthly, May, 1863.)

"The starting-point of this paper was a desire to call attention to certain remarkable AMERICAN INVENTIONS, especially to one class of mechanical contrivances, which, at the present

*The somewhat singular illustration at the head of our article carries out an idea which has only been partially alluded to by others. Man is a *wheel*, with two spokes, his legs, and two fragments of a tire, his feet. He rolls successively on each of these fragments from the heel to the toe. If he had spokes enough, he would go round and round as the boys do when they "make a wheel" with their four limbs for its spokes.

time, assumes a vast importance, and interests great multitudes. The limbs of our friends and countrymen are a part of the melancholy harvest which War is sweeping down with Dahlgren's mowing-machine and the patent reapers of Springfield and Hartford. The admirable contrivances of an American inventor, prized as they were in ordinary times, have risen into the character of great national blessings since the necessity for them has become so widely felt. While the weapons that have gone from Mr. Colt's armories have been carrying death to friend and foe, the beneficent and ingenious inventions of DR. PALMER have been repairing the losses inflicted by the implements of war. Artificial limbs owe their perfection to his skill and long-continued labor. * * *

It is not two years (1863) since the sight of a person who had lost one of his lower limbs was an infrequent occurrence. Now, alas! there are few of us who have not a cripple among our friends, if not in our own families. A mechanical art which provided for an occasional and exceptional want has become a great and active branch of industry. War unmakes legs, and human skill must supply their places as it best may.

The "Anglesea leg," was long famous, doubtless merited the reputation it acquired as superior to its predecessors. But legs cannot remain stationary while the march of improvement goes on around them, and they, too, have moved onward with stride of progress. In an age when appearances are realities, in the condition of the Marquis of Anglesea, for instance, it becomes important to provide the cripple with a limb which shall be presentable in polite society, where misfortunes of a certain obtrusiveness may be pitied, but are never tolerated under the chandeliers.

A boy, ten years old, living in a village in Vermont at the time of the accident, had one of his legs crushed so as to require amputation. The little fellow furnished a peg and stumped round upon it for years. We can imagine what he suffered as he grew into adolescence under the cross of this unsightly appendage. He was of comely aspect, tall, well-shaped, with well-marked, regular features. But just at the period when personal graces are most valued, when a good presence is a blank check on the Bank of Fortune, with Nature's signature at the bottom, he found himself made hideous by this fearful-looking counterfeit of a limb. It announced him at the threshold he reached with beating heart

by a thump more energetic than the palpitation in his breast. It identified him as far as the eye of jealousy could see his moving figure. The peg became intolerable, and he unstrapped it and threw himself on the tender mercies of the crutch. But the crutch is at best an instrument of torture. It presses upon a great bundle of nerves; it distorts the figure; it stamps a character of its own upon the whole organism; it is even accused of distempering the mind itself.

This young man, whose name was B. FRANK. PALMER, (the abbreviations probably implying the name of a distinguished Boston Philosopher of the last century, whose visit to Philadelphia is still remembered in that city), set himself at work to contrive a limb which should take the place of the one he had lost, fulfilling its functions and counterfeiting its aspect so far as possible. The result was the "Palmer leg," one of the most unquestionable triumphs of American ingenuity. Its victorious march has been unimpeded by any serious obstacle since it first stepped into public notice. The inventor was introduced by the late Dr. John C. Warren, in 1846, to the Massachusetts General Hospital, which institution he has for many years supplied with his artificial limbs. He received medals from the American Institute, the Massachusetts Charitable Association, and the Great Exhibition in New York, and obtained the GREAT MEDAL and an honorary mention from the Royal Commissioners of the World's Exhibition in London—being the only maker of legs so distinguished. These are only a few of fifty honorary awards he has received at various times. The famous surgeons of London, the *Societe de Chirurgie* of Paris, and the most celebrated practitioners of the United States have given him their hearty recommendations. So lately as last August, that shrewd and skillful surgeon, Dr. Henry J. Bigelow, who is as cautious in handling his epithets as he is bold in using the implements of his art, strongly advised the Surgeon-General to adopt the Palmer leg, which, after a dozen years' experience, he had found none to equal. We see it announced that the Board of Surgeons appointed by the Surgeon-General to select the best arm and leg to be procured by the Government for its crippled soldiers chose that of Dr. Palmer, and that the Surgeon-General approved their selection.

We have thought it proper to show that Dr. Palmer's invention did not stand in need of our commendation. Its merits, as we have seen, are conceded by the tribunals best fitted to judge, and we are, therefore, justified in selecting it as an illustration of AMERICAN MECHANICAL SKILL. * * *

To make ourselves more familiar with the working of the invention we are considering, we have visited Dr. Palmer's establishments in Philadelphia and Boston. The distinguished Surgeon-Artist is a man of fine person, as we have said. But if he has any personal vanity, it does not betray itself with regard to that portion of his organism which Nature furnished him. At least, if he follows the common rule and puts that which he considers his best foot foremost, he evidently awards the preference to that which was born of his brain. He walks as well as many do who have their natural limbs. He puts his vegetable leg through many of the movements which would seem to demand the contractile animal fibre. He goes up and down stairs with ease and despatch. In his ante-room were persons in different stages of their second learning to walk. At first they move with a good deal of awkwardness, but gradually the patent limb seems to become, as it were, penetrated by the nerves, and the intelligence to run downwards until it reaches the last joint of the member.

Dr. Palmer as we have incidently mentioned, has a branch establishment in Boston, to which also we have paid a visit, in order to learn some of the details of the manufacture, to which we had not attended, in our pleasant interview with the inventor. The ante-chamber here, too, was the nursery of immature *lignipeds*, ready to exhibit their growing accomplishments to the inquiring stranger. It almost seems as if the artificial leg were the scholar, rather than the person who wears it. * * * * *

The *willow*, which furnishes the charcoal for the gunpowder that blows off limbs, is the wood chosen to supply the loss it has helped to occasion. It is light, strong, does not warp or "check" so much as many other woods, and is, as the workmen say *healthy*, that is, not irritating to the parts with which it is in contact. The leg is shaped very much as a sculptor finishes his marble, with an eye to artistic effect—not so much in the view of the stranger, who does not look

upon its naked loveliness, as in that of the wearer, who is seduced by its harmonious outlines and solaced with the consciousness that he carries so much beauty and symmetry about with him. The joints are most carefully made. Windows, oblong openings, are left in the sides of the limb, to insure a good supply of air to the extremity of the mutilated limb. Many persons are not aware that all parts of the surface *breathe* just as the lungs breathe, exhaling carbonic acid as well as water, and taking more or less oxygen.

One of the workmen, a pleasant-looking young fellow, himself, we were told, wore the leg. We begged him to give us a specimen of his walking. He arose, and walked rather slowly across the room and back. "Once more," we said, not feeling quite sure which was Nature's leg and which Palmer's. So he walked up and down the room again, until we had satisfied ourselves which was the leg of willow, and which that of flesh and bone. It is not perhaps to the credit of our eyes or observing powers, but it is a fact, that we deliberately selected *the wrong leg*. No victim of the thimble-rigger's trickery was ever more completely taken in than we were by the contrivance of the ingenious Surgeon-Artist.

Our freely expressed admiration led to the telling of wonderful stories about the doings of persons with artificial legs. One individual was mentioned who *skated* particularly well; another who *danced* with zeal and perseverance; and a third who must needs *swim* in his leg, which brought on a dropsical affection of the limb—to which kind of complaint the willow has, of course, a constitutional tendency—and for which it had come to the infirmary where the diseases that wood is heir to are treated.

But the most wonderful monuments of the great restorer's skill are the patients who have lost both legs as they walk forth again before the admiring world, balanced upon their two new-born members. We have before us delineations of six of these men. One of them was employed at a railway station near this (Atlantic) city, where he was often seen by a member of our own household, whose testimony we are in the habit of considering superior in veracity to the naked truth as commonly delivered. He walked about in a way that hardly attracted attention.

The inventor of the leg has not been contented to stop there. He has worked for years upon the construction of an artificial ARM, and has at length succeeded in arranging a mechanism, which, if it cannot serve a pianist or violinist, is yet equal to holding the reins when driving, receiving fees for professional services, and similar easy labors.

Where Dr. Palmer means to stop in supplying bodily losses, it would be premature to say. We suppose the accidents happening occasionally from the use of the guillotine are beyond his skill, and spare our readers the lively remark suggested by the contrary hypothesis.

It is one of the signs of our advancing American civilization, that the arts which preserve and restore the personal advantages necessary or favorable to cultivated social life should have reached such perfection among us. American taste was offended, outraged by the odious "peg" which the Old-World soldier was proud to show. We owe the well-shaped, intelligent, docile limb, the half-reasoning willow of Palmer, to the same sense of beauty and fitness which moulded the soft outlines of the Indian Girl and the White Captive in the studio of his namesake at Albany.

* * * * *

America has bestowed upon the world an anodyne which enables us to cut arms and legs off without hurting the patient; and when his leg is off, she has given a true artist's limb for the cripple to walk upon, instead of the peg on which he has stumped from the days of Guy de Chauliac to those of M. Nelaton."

Recent developments in the art which I am considering have mysteriously recalled to light the old, old story, which I had hoped might expire with the old Tannery, whose expiring flames fanned it into new life.

As it must ever stand recorded in the list of disasters, I may as well make the best of it in showing what has resulted from the misstep of the boy, for I could not rest content if its consequences awakened a sympathy that might be allayed.

The historian has noticed the disaster as a "blessing in disguise;" the philosopher has found it the source of "the most unquestionable triumph of American ingenuity;" the philanthropist has declared it to be "a great boon to suffering humanity." Better than this, to me, sounds the simple statement of an estimable gentleman who wears the leg and

writes: "The new invention is a grand success and places your name high among the benefactors of mankind. *I feel as if the muscles, so long dormant, again reached to the foot, the warm blood seems again to tingle in the toes, and old sensations, long-forgotten, resume their sway.*"

Reader, you pause, you cannot comprehend it! Well, do not try to, but send a Postal Card to a gentleman well-known to fame as the inventor of the "Pullman Palace Car,"—F. H. Furniss, Esq., Waterloo, New York. Ask him if he wrote this and feels thus.

As I write, an eminent clergyman who has worn my original invention for twenty-six years and does not seek a better, Rev. E. G. Brooks, D. D., of Philadelphia, favors me with a call. I show him the letter just received from Mr. Furniss, and he exclaims, "Can this be so? I should like to have a return of that feeling." The Rev. Doctor soon shall, as his limb is like that of Mr. Furniss.

The mail just brings a letter from an old patient, General Thomas J. Strong, of Sandy Hill, N. Y., who gallantly lost a leg in the great war and got the new leg to try the new patent, having a good limb in use. He exclaims, "You have got the right thing at last." The General was fearful of putting on the new leg at first, as all are.

Just here I may properly allude to a valued friend and patient, the Rev. E. M. Pecke, Rector of a Protestant Episcopal church, Richfield Springs, New York. He has written to me, confirming the opinion formed in the year 1862, when he first wore the Palmer foot. He assures me that he has been so well satisfied as not to have sought a better appliance. Concerning my late surgical and mechanical achievement, he said:

"MY DEAR DOCTOR PALMER:—I think your new advance in the Art is one of the most *marvellous* things I ever witnessed. Nothing can give me more pleasure than to add my testimony to that of hundreds of others in the matter of the excellence of your patent appliances for amputated limbs. As you know, my case is one of the SYME operations of the right foot. I have walked, not only with comfort, but with really pleasurable satisfaction, for five hours and a half at a time, using no cane (I never do), over the roughest kind of country. On the city pavement I have found myself fully equal to all the walking I have any need for. I am sure if

all persons who suffer the loss of a limb experience as little inconvenience as I do, they will not waste many moments in regret. I have always been a very active man, and I do not find that I am now any less active than in former days. May you long live to make others as happy and as useful as you have made me, and may they all be as grateful to you as

Your loving friend, E. M. PECKE."

Such expressions as the foregoing, from distinguished men who are only interested in advancing the truth, cause me to hope that I may not be misunderstood at this time in making known a greater success achieved than I ever dared to hope for. In view of this transcendent advance, now fully established, I am willing to pass from the original invention, remembering it only as the step-ladder to the higher achievement. The mutilated have been thankful because they could, in the past, go on a false leg; they now rejoice, because they no longer *go* but *walk*. No mutilated man has been able to walk in the true sense of the word till now, and the new sensation is as pleasing as can be well imagined in the change of method, to a *natural standpoint*. If the observer shall fail to *see* a marked improvement, in a case where the person has before gone so well as to conceal his loss, still the wearer will not fail to *feel* the difference. A shoe may look well and the wearer may not limp, and yet a painful foot may be enclosed; so of the stump, whose sensitiveness the possessor will conceal at any expense of feeling.

I state what I feel and know, and what I have a multitude of witnesses to, that it is not easy to over-estimate the value of this new method and mechanism.

Without intending to moralize in these pages, I am impelled to deduce a moral from the remote source by me unsought in the devious pathway of the invention, which others, wiser than myself, have sought and noticed, as furnishing the cause and the occasion for the advance step taken in artificial locomotion.

To walk, even on the best of human legs, is found by analysis to be a "perilous operation," which few understand either in youth or age, unless some fatal misstep is taken. What, then, must be the perfection of the artificial leg in order to render the act of walking *safe and comfortable*? A knowledge of anatomy, surgery and mechanics must be

combined, and then there must be inventive as well as constructive ability, all practically applied by a long series of trials in the vocation, for without great experience in the art the best theoretical knowledge will result in practical failure.

Professor Holmes has startlingly said :

“Walking is a perpetual falling with a perpetual self-recovery. It is a most *complex, violent, and perilous operation*, which we divest of its extreme danger only by continual practice from a very early period of life. We find how complex it is when we attempt to analyze it, and we see that we never understood it thoroughly until the time of the instantaneous photograph. We learn how violent it is when we walk against a post or a door in the dark. We discover how dangerous it is when we slip or trip and come down, perhaps breaking or dislocating our limbs, or overlook the last step of a flight of stairs, and discover with what *headlong violence we have been hurling ourselves forward.*”

We not only “hurl ourselves,” but are, as we have seen, sometimes *hurled* with more than headlong violence to or from the post of duty ; and in all this hurling it often requires the observation of years to discover which was the true and which the false step by the way. But when the life-work is well pursued, “there’s a Divinity that shapes our ends,” and what we “rough-hew” in darkness and in sorrow, is divinely shaped and finished by an Unseen Hand, in joy.

Surgical science and compensatory art have progressed with rapid strides during the last third of a century, and the results are most cheering to the mutilated. Within thirty years ether has been introduced as an anæsthetic agent, removing the fear and subduing the pain of the knife ; the forms of amputation have been changed by the introduction of new rules, which produce the best and most useful stump, and artificial limbs have been planned and perfected. In the year 1834, Prof. Holmes has told us that a boy ten years old had a leg amputated, without the soothing influence of the then unknown charmer, Letheon. Twelve years later, what the boy could not find, he *made*. Thus a leg was lost in pain, with no soothing balm at hand, and thus, as the past had not furnished a suitable substitute, the Palmer leg was invented to supply the loss. The broader idea of supplying others arose out of a public demand for this leg, which increased rapidly and regularly until the time of the

great war, when it reached thousands annually. This leg is now sought and purchased in every part of the world. Its reputation has continued to rise in popular esteem until the present time. I now present some particulars of the first trials in the new advance in the compensatory art, surpassing all precedent. The loss which was in the past *concealed* is now *repaired*. Far from discomfort, there is now *pleasure* in walking, which fact is attested by hundreds of persons on the new leg.

The former invention is so well known that I find it unnecessary to dwell upon it. The best judges in the whole world have recorded its merits, and the mutilated of every nation now apply for it to remedy their losses. It harmonizes with the new, and I refer the reader to the record which has been made by others concerning it to show how the two blend, and pass to notice the last work as one of greater importance, since it takes hold of the root of a surgical evil, and first removes *it*, preparatory to utilizing, in a comfortable manner, the *end*, which heretofore, like the sore end of a finger, has been uncomfortable, useless and troublesome, but now becomes the most important portion of the stump in *walking*.

The renewed inventive effort has added a personal benefit and comfort not less gratifying than that gained in the original invention in 1846, and I am enabled to construct a leg and adjust a socket, under my new patent, which entirely surpasses anything formerly made, and my patients, who thought the old leg perfect, are my witnesses.

I am aware that the proposition to stand a person on the end of a tender stump seems startling, but I ask those interested to examine into the facts and learn what has resulted from the unbroken series of experiments continued through thirty years, under the stimulus of personal want and in the active pursuit of a vocation which has brought to me many thousands of patients in every mutilated condition—some from all countries—thus disclosing every form of amputation, and every consequent want, showing the successes and failures in the modes of treatment, surgical and mechanical, throughout the world.

All will admit the value, when they can see the practicability of this new and startling method, which, far from being a hobby of mine, or of any person whom I ever had heard of, was found and established while I was engaged in

a more questionable surgical experiment on the stiff knee, which had been bent and useless for 38 years, and was suggested by the improved condition of the *tender and nervous end*, which had been prepared by the manipulations and pressure upon it, and by a healthy though forced action of the muscles within it, (in the process of straightening the knee), for the startling test.

The first thought of standing on the end of a stump which I had guarded from pressure, and touch even, as I would an eyeball, gave me a thrill and caused nervous excitement not pleasant to feel, and not finally allayed until the *act* of standing had been successfully accomplished. And, it may be noted, that as I had no idea of making such an experiment until the hour when it flashed across my mind and was tried, I had made no preparation for such a trial.

"Necessity is the mother of invention," sometimes, indeed. I found it necessary to improvise a trial-socket, without materials or implements, in order to utilize a troublesome (or valuable) thought at the moment when I had the nerve to attempt it. Necessity had disclosed the want of the invention originally, in the loss of the leg. The failure of the surgeon in his work so long before (though a kind, intelligent man) had suggested a surgical experiment for which there was no report of a parallel case successfully treated. I was engaged alone and unaided in forcing out the stiff knee, which seemed to defy attack, when this new thought came into my mind. I at once clasped my fingers so as to form a socket of the hollows of my two hands combined, and, placing the end of the stump, nervous and shivering, into this natural socket, found that I could rest my weight in that way with comfort. This was the first trial of the "Safety-Socket," and it at once assured me that the test might lead to important results. At this point the *possibility* of the method had been demonstrated. Was it *feasible*? Was it *safe*? What if the wearer should fall and force his stump violently downward? Was it, in short, a method to be adopted, or an extreme exception to a rule,—that was only *possible*? Should I, perhaps, do myself an injury in using it? Finally, how should the socket be made, and *who would dare to try it* among my patients. All these thoughts came into my mind, and many more which may be imagined. If in error it was a thing to be quietly rejected, and if I was

not in error it was of too much importance to be pressed into use until fully perfected in all the details. At length I mentioned it to one or two persons about me and found that they could not understand it. I searched the works for light on the subject for months and found no comfort in them. No one had written that it could be done, and as no person about me could think it possible I thought best to assure myself most fully in the quiet of my own home, free from criticism, with no one ready to laugh at my failure if such it should finally be. I proceeded from day to day cautiously, but steadily, and after hundreds of successful trials of sockets in private, put on the invention in the presence of my assistants, who were at once convinced of its success.

My left leg was amputated, when ten years of age, about two inches below the knee. The knee was then bent back and became stiff. For ten years on a crutch, and twenty-eight on an artificial leg, I have walked with my knee-joint permanently bent and stiff, and in thirty-seven years no attempt was made to straighten it. Feeling an irrepressible desire to use the knee-joint, and in the hope that it could *possibly* be done, I had a careful examination made by distinguished surgeons, who gave reasons for believing the leg *could not be straightened* without a severe surgical operation. I confess that their opinion appeared to be formed intelligently, beyond grounds for question, but my desire to straighten the knee was so great that I determined to try the *experiment*. In one month I gained so much in extension as to find complete success assured, and in a short time I could freely move the hitherto useless joint. The active efforts in straightening it had given new tone to the muscles, and the limb possessed double its former strength; the thigh increased three inches in size, and became the counterpart of its fellow in appearance as well as in strength. What I had not ventured to hope for in thirty-eight years—WALKING PERFECTLY WITH MY TWO NATURAL KNEES, like my fellows—became a reality; but so strange was the transition that I was disposed to question the facts concerning a condition so gratifying. Then arose a review of the whole subject of *amputations, stumps, and artificial legs*.

For the information of persons interested, who will admit the value of the new theory when they can be convinced of its comfort and safety, the following letters are presented.

Who would try it in Philadelphia? Meeting a gentleman who is prominent at the Philadelphia Bar, and who had a tender stump, as my own had been, I told him what I had done. He would not be impolite, and as he had from boyhood found comfort in my invention, he would not *willingly* allow his incredulity to be manifest, but it was soon discovered. That night he began to think of what I had told him and wondered if I was a little insane on a troublesome point of invention too long contemplated, or if *possibly* it could be true that a man could walk on the end of a tender stump. The advent of the new leg on the icy pavement of the sidewalk in Philadelphia was made one week later by him.

Commissioner Hibler, will tell the rest of the story here, as he wrote it to a gentleman who just then had addressed me thus.

“Office of FOWLER & HOUSE, Druggists, }
Montgomery, Alabama, March 11, 1873. }

DR. B. F. PALMER,

DEAR SIR:—Your letter about the new patent leg has come to hand. It seems that the improvement is a complete success; but I confess that it is hard for me to believe that one can bear even a portion of his weight on the end of the stump. Does the new improvement obviate the chafing? Can I walk with more ease and a more natural appearance than with the style of leg (Palmer) now worn by me?

Yours, &c.,

E. G. FOWLER.”

“PHILADELPHIA, March 18, 1873.

DEAR SIR:—Your letter to Dr. B. F. Palmer, has just been presented to me by him with the request that I would answer it, and state my experience in regard to the direct application of the weight of the person to the *end of the amputated leg*. I had worn the Palmer leg for many years, with great satisfaction, before trying the new mechanism.

When Dr. Palmer first suggested walking on the end of the stump, I thought it was the chimera of a brain allowed to dwell too long upon one subject. In fact, knowing my stump (an amputation of 1847) to be an extremely conical and sensitive one, I believed it to be *an utter impossibility*; but, accepting his suggestions for testing it, as soon as I went home I experimented upon my leg by clasping my hands over the end of the stump and forcing my weight upon it, cautiously at first, but firmly. I was greatly surprised to find that no pain resulted from the experiment. Encouraged, the next morning I increased the pressure, and was astonished at the amount I could sustain. Still doubting, I per-

severed for a week or more and then went to the manufactory and had the appliance for taking the pressure directly upon the end of the stump fixed into my artificial leg. *Thoroughly unbelieving, I tried it, and to my surprise no pain followed.* Willing to give it a fair trial, I went out into the street and home, and have worn it continually ever since.

While attending a ball one evening at the Academy of Music, in this city, I advanced to address some friends in a box, and in stepping forward to greet them, I made a misstep with my *artificial leg foremost*, and went down about *the height of a chair*, with such force as to break the lacing of the upper part of the leg above the knee. I supposed that I had torn the end of the stump open, and retired to see what injury I had sustained. I was greatly astonished to find the *external surface of the stump was not in any way injured*. I repaired the lacer and walked home with my friends, and the next morning walked down to my office without a cane (rarely ever using one) a distance of about one mile, with only the natural soreness resulting from such a concussion. I have used the leg ever since with *increased confidence and growing pleasure at the result*.

I am satisfied that it is the great improvement of the age. *The new sensation upon the end, in the safety socket, is much like that felt on the bottom of the foot in the boot*, so that the leg again appears almost natural, rather than artificial. No one is able to see from my gait that I wear an artificial leg. Persons whose legs have been amputated by modern methods of surgery, will be able to walk on it at once, without pain, and with *an ease and elasticity of motion that will not only gratify, but astonish them to a degree beyond conception*.

Very respectfully,

W. GRIER HIBLER,
UNITED STATES COMMISSIONER,
435 Library St., Phila."

E. G. FOWLER, Esq.

Montgomery, Alabama,

August 9th, 1873.

"DR. B. F. PALMER.

Dear Sir:—The new improved leg reached me about six weeks since. The *safety-socket, or end support*, is a complete success. I walk with greater ease and more comfort with the end support than without it. The leg gives me perfect satisfaction, and with your *new improvement* you certainly have the best artificial leg ever seen. I have worn it daily since receiving it, and have had no trouble with it; my *stump has not been chafed or irritated from the use of the leg*.

Very respectfully,

E. G. FOWLER.

March 23d, 1874.

The new leg has never given me any pain.

E. G. FOWLER."

In all the past it has been *erroneously* supposed that the *point of amputation* could not properly become the *point of support* in cases of amputation between joints. This belief is so firmly fixed in the minds of surgeons, limb-makers, and limb-wearers, that an attempt to introduce the *new method* is likely at first, unless happily presented, to encounter disbelief and opposition from those who should at once become its advocates. Fortunately, however, those who have lost limbs will be willing to fairly consider the evidences, and will be glad to discover that the new theory has been established by sound anatomical, surgical and mechanical tests.

Let us notice a few evidences of the progress of Surgical Science and Compensatory Art in the past, to aid in accepting the *truth* of the present time. In the sixteenth century, Ambrose Paré, the great surgeon of the time, for once left the *old place of election*, just below the knee (which had been the method of Celsus and Galen), and amputated a leg at the *lower third*, or above the ankle. He did it in the hope that an *artificial leg* could be made which could be used by his patient with the long stump, as *he thought a leg should be used*. The mechanics of that age failed, in this case, to make a useful leg, and Paré performed a second amputation, removing the long stump below the knee, simply because the limb-makers were unable to fit a socket upon which the patient could walk.

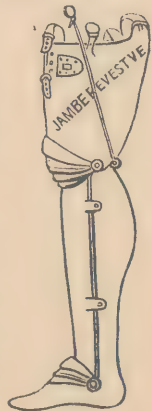
This failure was fatal to the Art for centuries.

At last the *long stump*, as made by Paré, was demonstrated to be the best possible for applying the Palmer leg. It then became the *model stump*, and surgeons changed the "place of election."

Reflect upon the sad experience of the noblest and most learned surgeon of comparatively modern times. Paré was the great Apostle of Mercy to the suffering. He was pained to witness the crudeness of the best artificial legs, and yielded his efforts with a heavy heart on account of the mechanical failure.



Leg below Knee,
1560.



Leg above Knee.
1560.

It does not appear that any successful attempt has been made in the past to render the *end of the stump the point of support in case of amputation between joints*. Paré does not mention it. Verduin, in 1696, placed the support *on the walls of the thigh* for amputations below the knee. Von Sollingen attempted, in vain, to support the weight *on the sides of the leg below the knee*. Both failed. Goyrand, in 1831, transferred the point of support to the *perinaeum*. These are the methods known in the past, and practiced in France and England, as well as in America.

Limb makers, for centuries prior to the present, selected from these plans without any established rule.

In 1846, new rules for amputations, and for fitting stumps, were established, and since then the operations of Syme and Pirozoff settled the question of support on the end, in case of an amputation at the knee or ankle. *Suitable mechanism was soon made for these operations*. The step now taken gains support on the end *in case of amputation at a point between joints*, giving immense advantage in use. To at once become convinced of its practicability, it is only necessary to *try it intelligently*, and not attempt to *reason it out*. The reasoning of men for hundreds of years only kept systems unsettled, delayed progress, and maintained a fear on the part of the sufferer to try false legs of any kind. It is well to give less thought to what *cannot* than to what *can* be done in this important matter. Intelligent *action* on the part of surgeons and their subjects, for one year now, will demonstrate a gain to the mutilated surpassing the achievements of past centuries, and beyond present belief.

In all the past I have abstained from announcements of trivial improvements or questionable theories, and am now willing to trust to the Profession to decide on the evidences of the *new method*, assured that the mutilated will soon settle the question of its value in a practical way.

For the benefit of those not familiar with Osteology, or the anatomy of the bones, and the manner in which an amputated limb heals, it is important to give some information in



Syme Operation



Model Stump,
1846.

order that mutilated persons may understand the perfect safety of the new method of bringing the amputated end of a limb into contact with a socket, as a *point of support*. While the *true condition* is not understood, a person cannot make an intelligent trial of the new method, and a slight disturbance of the muscles over the end of the stump gives unnecessary anxiety, and a groundless fear of forcing the end open by such contact. There is no danger of this result, as is shown in the first article of this book.

The statement of James Tanner, Esq., Deputy Collector of the Port of New York, is conclusive on this point (see page 29). I now have four double amputations which establish the fact fully.

The cut shows the application of the Safety-Socket to these four men, to whom reference is given, and whose names will be found in this book. Standing (as seen) on the ends of the stumps in the safety-socket is so pleasant that persons walk by the hour for exercise. The feeling is much the same as that of standing on the sole of the natural foot. Muscles and tendons which have been shortened and left inactive, are again brought into natural action about the *end of the stump and through the thigh, to the body*. The end of the stump seems to become the *foot* in the new socket, which is, to it, the *boot*. There is no sinking down in walking, as when the support is on the sides of the leg. A firm, *unflinching* step takes the place of a step otherwise cautious and light. The end of the stump, when subjected to the new use, instead of becoming more tender and sensitive, soon becomes *tough and callous*. Twitching nerves become quiet and comfortable, and from the abnormal the limb seems to regain the natural condition. *Why should it not be so?* Nature thoroughly heals her wounds and perfects her work.

When the stump has fully healed, its *immediate* use, in the Safety-Socket, is desirable. By thus commencing a healthy action of the muscles they regain a vigorous condition, and all abnormal adhesions of the integuments and nerves are avoided. The Safety-Socket cannot be too soon applied.



Both Patent Legs.

THE PALMER LEG IN BATTLE.



LETTER OF GENERAL W. F. BARTLETT.

POWHATAN IRON WORKS,
RICHMOND, VA., August 26, 1873.

DEAR SIR:—In reply to yours of the 23d inst., I willingly bear testimony in favor of your leg over all others that I have tried or seen. Three years of active campaigning in the last war, and frequent severe tests that travel on foot and horseback have since subjected it to, have so proved its *durability and perfection*, that I was incredulous when you told me you had made something better still; and it was not until I *stood in your office on the end of my stump* that I could believe it possible.

You are the only man who has ever forced me to admit that there could be anything better for the purpose than a Palmer leg.

Can you make me a new leg on the improved plan without my visiting Philadelphia? If not, I will stop and be fitted when next passing through; although, as I told you, this leg is *quite good enough*.

Very respectfully,

Your obedient servant,

W. F. BARTLETT,

B. FRANK. PALMER, LL. D.

President.

THE LATE U. S. MINISTER TO SPAIN.

LETTER OF MAJOR-GENERAL SICKLES.

SIR:—I have great pleasure in bearing testimony to the excellence of the artificial leg you made for me. *I have used it long enough to convince me of the superior mechanical construction of the limbs you make.*

My intercourse with yourself has impressed me with your unwearied devotion to your patients, and the rare scientific accomplishments you bring to their relief.

In placing this note at your disposal, I only perform a duty to my comrades who may, by the fortune of war, have occasion for your services.

I remain, Dear Sir, very respectfully,

D. E. SICKLES.

B. FRANK. PALMER, LL.D.

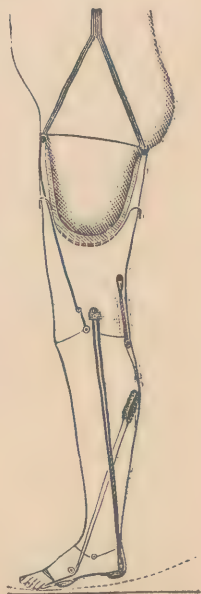
PALMER LEG AND SAFETY-SOCKET ABOVE KNEE.

The cut (a sectional view, with openings) gives a good view of the mechanism and safety-socket in the new Patent Leg, as applied above the knee. It is essentially the same employed in the various cases, only modified to suit the requirements of different amputations.

Sometimes the safety-socket rests on the top rim of the leg (in case of a short stump); in other cases, it rests on, or is attached to a point lower down (in case of a long stump.) This is the case both below and above the knee.

The safety-socket is perforated all over with holes to ventilate and keep the stump healthy and cool.

The exceeding simplicity of the new leg is seen at a glance.



New Patent, 1873-

LETTER OF MAJOR-GENERAL FESSENDEN.

The gallant young General Fessenden, son of the late Secretary of the Treasury, lost his leg below the knee early in the great war, and continued on active duty to the end. He was a worthy compeer of General Bartlett, and did as gallant service in the field on the Palmer leg.

General Fessenden is now filling a useful and honorable position in his native state, Maine.

WASHINGTON, December 27, 1864.

DEAR SIR:—Having worn one of your patent legs, I desire to add my testimony in favor of an invention so beneficial to humanity. I suffered amputation of my right leg, six inches below the knee, in April, 1864. Five months later I began to wear my false leg which you made. The socket was comfortably fitted, and I have no trouble with the leg whatever. I cannot express in language my admiration and gratitude for an invention which reconciles me to the loss of a limb, and enables me to enjoy so much. *My patent leg has been perfectly satisfactory in every way.*

I am, very respectfully,

Your obedient servant,

FRANCIS FESSENDEN.

B. FRANK. PALMER, LL.D.

LETTER OF GENERAL MACRAE, U. S. A.

NO. 100 EAST THIRD STREET,
CINCINNATI, OHIO, January 1, 1866.

DR. B. F. PALMER.

DEAR SIR:—Your manufacture of ARTIFICIAL LEGS has been fully tested by me during a period of more than SIXTEEN CONSECUTIVE YEARS. I take pleasure in testifying, for the benefit of others, that your manufacture is very *durable, simple, and excellent*. I have not the talent to point out any change in it.

Very truly yours,

N. C. MACRAE, U. S. A.

General Macrae was the first prominent military man who purchased the Palmer leg for active service, in the year 1847. He remained in the service on duty till honorably retired, in 1861.

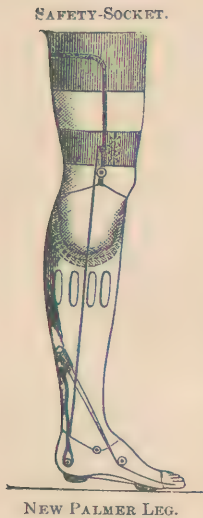
JAMES TANNER, ESQ.,

DEPUTY COLLECTOR OF THE PORT OF NEW YORK.

This gentleman lost both legs (four inches below the knees) in the great war.

We hear of him riding on horse in the field with two Palmer legs, on special duty, and then, when dismounted, dragging on the rough ground with one patent foot clinging to the stirrup. When the war was over he turned his talents to good account by accepting an important office in the New York Custom House, where he may be seen or written to.

COLLECTOR'S OFFICE, U. S. CUSTOM HOUSE,
NEW YORK, August 26, 1873.



MY DEAR SIR:—I consider myself morally bound to lay before you the result, or a bare synopsis at least of the result, of my experience, in walking on a pair of your artificial limbs. I have four inches of stump below each knee, the amputation done on the field under fire and illy performed. In April, 1863, over ten years ago, I procured a pair of your limbs which I have worn constantly since that time. My experience on them in that time has been varied and trying in the extreme to the artificials. I jumped from a wagon once, some several years ago, when my horse was attempting to run away, and came down heavily on my feet, fully expecting to break one or both of the legs. They stood the shock without injury. On the Hatcher's Run battle-field, in 1865, I was thrown from horse, and my foot hanging in the stirrup, I was dragged over rough ground several rods, but the artificial portion of my body stood it much better than the natural portion. I seldom stop a street car to get on or off. In short, if ever a man gave artificial limbs rough usage, I am that man, and I must say that their durability, utility and excellence have exceeded my highest hopes.

After *ten years constant usage*, I deem them capable of at least several years good service, yet I now set them aside for the new patent, with safety-socket.

A word as to the safety-socket. I confess when I first read your letter, stating that you proposed we unfortunates should attempt to go on the end of our stumps, it sent a nervous thrill through me; but *following your advice* about testing what amount of pressure my stumps would bear, I was amazed at the very favorable results. I have the utmost confidence, after experimenting, as I now have on my new limbs, that *the safety-socket is a great success*—the *ne plus ultra* for all with amputated limbs.

September 4th.

After a practical test, a *thorough trial* of my new legs with the *safety-sockets* I am bound to say this: You could never have prevailed upon me to be your *first* patient in the matter of receiving support on the end of the stump, for I think every one of my fellow unfortunates will agree with me that the idea when first presented to the mind strikes one with horror, and raises the *strongest unbelief*; nothing but the knowledge that *some one else had done it*, induced me to try it. One of my stumps was particularly tender, as the bone had once burst through the end.

Now, I will tell you what *I have done and do*: Sitting down, I stamp *my feet with all my power*; standing up, with my hands resting on chairs, *I raise myself two feet from the floor, and letting go the chairs, come down "right side up with care."* The sum of the usage is,—I have *demonstrated the complete success of the safety-socket. It is positively comfortable.* I speak strongly in its favor. Those who read this and know me, will, I believe, be induced to investigate the matter. To those of our class who do not yet accept the facts, I beg leave to say that too well do I realize all the discomfort attending their crippled condition to either willingly or unwittingly lead them in a wrong direction.

Yours, truly,

JAMES TANNER,

Chief Clerk, &c.

U. S. Custom House, Wall street, New York.

NEW YORK, Oct. 1st, 1873.

MY DEAR SIR:—The legs exceed my utmost expectations. I don't know what more I can say. Everybody notices the increased facility with which I move. I walk with much more ease and confidence, especially without a cane.

I am to-day sworn in as Deputy Collector of the Port.

Yours, in haste,

JAMES TANNER.

Deputy Collector U. S. Custom House, New York.

DR. B. FRANK. PALMER.

PEORIA, ILLINOIS, August 26, 1873

DR. B. FRANK. PALMER.

DEAR SIR:—The leg was duly received and works well. The safety-socket is a decided improvement. There is a pleasantness with it that will make it a success. It keeps the stump from the sides of the limb. I am satisfied.

Yours, truly,

JOHN J. JACK.

HARRISBURG, PA., August 29, 1873.

DR. B. F. PALMER.

DEAR SIR:—Your new Patent leg with safety-socket, is the most complete success imaginable. The first day I wore it I *put my whole weight on the end of my stump and walked at least three miles with the pressure on the end, as the first trial.* At night I found the end of the stump free from soreness. It surpasses all my expectations, and I am compelled to admit what I could not before trial believe, that *the end of the stump in a socket like your Patent, is the true point of support.*

I *feel*, and seem to *move*, my whole foot and all my toes in walking. I am astonished beyond measure at this wonderful result.

Respectfully, yours,

P. J. HART.

WAVERLY, NEW YORK, August 17, 1873.

DR. B. FRANK. PALMER.

DEAR SIR:—I am happy to inform you that the leg is a *complete success in every respect.* I could not begin to tell you what a great benefit it is to me. I would not go without it now for a thousand dollars. I am working on the P. and N. Y. Railroad as foreman, building double tracks in a very rough place, among iron, gravel and ties, and I can travel around without any care with great ease and comfort.

I can bear a great weight on the end of my stump and not notice it. *My stump has a very natural and easy feeling.* Nearly every one noticed when I came back, how easy I walked. I am satisfied and well pleased with the leg. It is a great improvement.

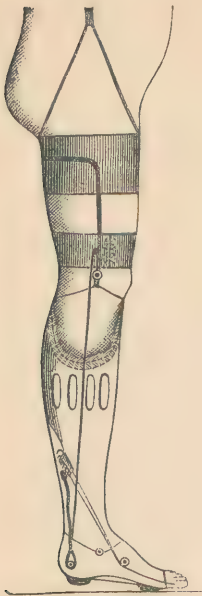
Respectfully, yours,

PATRICK MOORE.

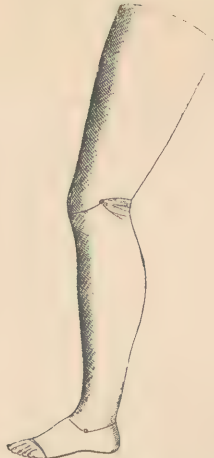
NEW PALMER LEG,

AND

"SAFETY-SOCKET,"



(BELOW KNEE.)



PATENTED APRIL 8, 1873.



(ABOVE KNEE.)

This invention consists in various improvements in the construction of the artificial leg invented and patented by me in 1846, and known to the public as the Palmer Leg. The object of these improvements is to render the leg lighter, stronger, more elastic and life-like in its motion; to adapt it to support the weight of the wearer upon the end of the stump, by the introduction of a properly-constructed socket; to give a double support and increased flexibility to the foot, by the introduction of auxiliary tendons in addition to and in aid of the cord or tendon representing the natural tendo-Achillis; to improve the movement generally; to give complete *side-motion* to the foot, and a fine external finish.

A SAFETY-SOCKET is adapted to the end, to support a *part* or *all* of the weight, as the stump will allow. This socket introduces a *new method* of walking. It applies *above* or *below* the knee equally well, and is the greatest comfort to the wearer, being adapted to every kind of stumps.

The advance step now taken is the result of patient inventive efforts, continued since the year 1846, and is without a parallel in the progress of the Art.

AN OLD AMPUTATION,

AND

THE NEW PALMER LEG BELOW KNEE.

I present a cut of a leg as amputated at the old place of election, by Paré, *the end resting in the patent safety-socket in new Palmer Leg.*

It is a happy fact, that this form of amputation, made for a use quite unlike that in which it is now utilized, is found to answer admirably in the safety-socket; as the *entire length* is employed, it becomes equal, in leverage, to a stump *twice as long* when fitted *without the Safety-Socket.*

This stump, intended to go on the knee (bent), was not supposed to be long enough to use the natural joint in walking.

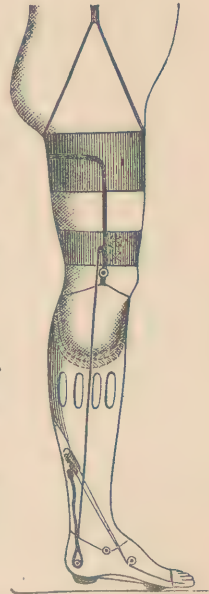
The base of support, in this case, is broad and admirable, and the control of the leg is complete, with a stump only two inches below the knee.

Stumps of this kind, which have been considered too short to apply the leg so as to use the natural knee, will be found sufficient for perfect use of the new leg.

The short stumps gain *in base of support*, for what they *lack in leverage*, performing admirably in the Safety-Socket.

It should be borne in mind that the entire mechanism is not the same in all cases. Some stumps need parts different from others; the *absence* of a principle should not be regarded a departure from the patent. The eleven new principles patented are for all the various forms of legs, both above and below the knee, and do not *all* go into a single leg.

The small cut shows the stump as it appears in the Safety-Socket. The end expands, by the natural muscular action, and from a *pointed* shape becomes *round and full*, as seen. A bed of muscles and tissues is made for the nerves and bones to rest in. The elastic socket clasps the end as gently as can be done with the hands, and with positive comfort.



THE SAFETY-SOCKET A SUCCESS IN 1872.

When thoroughly satisfied of the soundness of the new theory, based upon my own use of the Safety-Socket, in the year 1872, I too well knew that the sufferer, having a sensitive stump, would not accept the whole truth at once on my individual assertion; hence I deferred my own statement till I had the corroborative evidence of many others. In May, 1872, I applied the socket to a farmer.

Here is his statement, after giving the new leg the severest trial *on the farm*:

FAIRFIELD, ADAMS Co., PA.,
October 15, 1872.

DR. B. F. PALMER.

DEAR SIR:—I have worn your leg for ten years with great satisfaction. The improvement in the *new leg* you have made for me, *taking the weight on the end of the stump*, I like. I find it does well in use on the farm, and recommend it for any stump. I wish the Safety-Socket put into my other leg.

Yours, truly, JOHN M. MUSSELMAN.



Farmer in Safety-Socket.

LEAVITTSBURG, OHIO, March, 1873.

DEAR SIR:—When you told me I could bear my weight on the stump, I did not believe it possible, but I now walk with great comfort and ease, and *bear my weight on the end*. *I feel as if walking on the sole of my foot*. My stump now is warm and has a natural feeling as the result of this new use, which I have not before enjoyed. I regard the invention as one of incalculable value.

Yours, truly, JOHN BRATTON.



Balancing in Safety-Socket.

CASES BELOW THE KNEE.

WILMINGTON, DELAWARE, Aug. 11, 1873.

DR. B. F. PALMER.

DEAR SIR:—You wish me to inform you of my success in the use of your Patent legs. The first one I had you made for me in July, 1864. In a very short time I was enabled to walk far beyond my highest expectations, and but few other than those who knew of my loss had the remotest idea of it.

When I heard of the “stump support,” or “Safety-Socket” you had introduced, and had it explained, I concluded to give it a trial, from the fact that my stump was so short ($2\frac{1}{2}$ inches), I wanted all the purchase I could get. *It is the best improvement in artificial legs extant.* I walk better, with more ease, feel more comfortable than without it. My lameness is scarcely perceptible. I do not think too much can be said of it. Sir, it is a success. When I think of the comfort, ease and confidence I have, coupled with the naturalness of the step, I am *astonished* and can say with sincerity, that the leg with Safety-Socket is the *only true principle*. I have more of the natural feeling restored than I ever expected to again feel. Whether the world considers the new adjustment practicable or not, *henceforth I will wear the Safety-Socket.*

Yours, truly,

W. R. HODGSON, Attorney-at-Law.

SHORT AND TENDER STUMP BELOW KNEE.

JERSEY CITY, Aug. 7, 1873.

DR. PALMER.

DEAR SIR:—You wish to know how I get along with my new leg. I must say it was got up in good shape, and feels easy. I rest all *my weight on the end of the stump.*

Yours, truly,

M. H. NEAR, Machinist.

NOTE.—This case is one of special importance. Mr. Near is engaged in work that requires him *on his feet all day.*

DEAR SIR:—I have found that I can bear *my whole weight easily upon the end of the stump*. I find no inconvenience—I walk with much more comfort, and at the same time feel more natural. I feel that your improvement is a *decided success*, and will prove the *greatest comfort* to those who are obliged to use an artificial limb, not only in *walking*, but there is greater comfort while *seated* to have the end of the limb resting upon such a socket as you have prepared.

Your friend,

JOS. K. GOTWALS,

August 12, 1873.

Supt. of Schools, Norristown, Pa.

SINIBAR, MISSOURI, August 20, 1873.

DR. PALMER.

MY DEAR SIR:—I have just received the leg, and find I can step with my *full weight on the end of the stump*. You are aware that I am—will say, *was*—one of the unbelievers, for I believed my stump *wouldn't stand the pressure*.

But now, as I have the leg on, and find *it does not chafe or irritate*, my expectations are high. I anticipate great comfort in walking.

My old Palmer did so well that I could not expect much improvement. I am highly gratified.

Yours, truly,

S. J. ANDREWS.

COLUMBIA, MISSOURI, August 13, 1873.

DR. B. F. PALMER.

DEAR SIR:—The leg you sent me a short time since, came duly to hand. *It will do well*. I will write you again soon.

Yours, respectfully,

N. W. WILSON.

NOTE.—Col. W., was recommended to me by the Chief Examiner of Surgical Apparatus at the U. S. PATENT OFFICE, while my patent was pending, in April, 1873, on account of the obvious and great improvement seen by him in the *examination*. He declined to receive legs made by others, offered as *gifts*, and paid the *full price* for this new Patent.

LETTER OF P. B. SPRAGUE, Esq.

WINTERSSET, IOWA, April 11, 1874.

DR. B. F. PALMER.

DEAR SIR:—As I notice that you have mentioned me in your book, and ventured to refer to me before seeing me, or knowing the condition of my stump, I think that I ought to publish my case.

My leg was amputated in June last, and my stump is still in bad condition, as a troublesome nerve was left exposed just on the point of a small bone, which I supposed must be removed by a second operation, also small pieces of bone had come out recently, so that the end was not quite sound on fitting the substitute, and it was so tender and troublesome at the point of the nerve that I feared to touch it, and had made a tube to cover and protect it, as the touch of the end of a finger even would cause me to start with pain. I did not think it would do to walk upon, or even touch the end. So fearful was I, that I objected at first to a trial, but on your advice I allowed you to put in the Safety-Socket, when you assured me it could be graduated so as not possibly to do harm. I was astonished to find it an actual comfort in walking or sitting. Its gentle touch had a soothing effect (like the soft pressure of the hand upon the entire end and not upon a point), by keeping the blood from pressing there, and by preventing pulling upon the sides and over the end, so that positive comfort was at once found in it that could not be had by pressure in the usual way, as I at first tried the leg. It is wonderfully adapted to, and just the thing for a tender stump, and I am so delighted with it that I shall be happy to answer any correspondents who may wish to write to me, as I can in that way best assure them and you of my appreciation of the blessing which exceeds all my highest hope.

I wish you to make and send to me a second leg, to have the bearing on the end, as I find it perfectly comfortable, while pressure on the sides is not. I could not think of being without it for one hour. Please find check for \$300.

Yours truly,

P. B. SPRAGUE,
Merchant.

Stump and
Safety-Socket as applied.

CASES BELOW KNEE.

LETTER OF DR. GEO. H. TAYLOR.

MOBILE, ALABAMA, March 23, 1874.

DR. PALMER.

DEAR SIR:—The leg arrived in perfect order two days before your letter, and I must say it is the best I have ever had, and I have had good ones. I like the Safety-Socket and *would not be without it, as it is much more comfortable than I imagined it could possibly be.* I feel no inconvenience whatever, and am delighted with it. I Hope all your patients will think like myself.

You can refer any one to me, and I will take pleasure in convincing them that your limb is perfect.

Your most obedient servant,
GEO. H. TAYLOR.

WAR DEPARTMENT.

SURGEON GENERAL'S OFFICE,
Army Medical Museum,
Washington, D. C., April 8, 1874.

DR. B. F. PALMER.

SIR:—I fully realize all my expectations with the new leg. The contrast is so great from the artificial limbs I have formerly worn, that *I feel almost as if walking with the natural leg.* This is due not alone, to the Safety-Socket, but also to the lightness of the leg, and the perfect fit. I am surprised to think that *I bore the agony of the other legs so long,* but I supposed they were all alike. I have worn four other different maker's legs during the last ten years. The Safety-Socket is superior to any and all. I keep it on day and evening, a thing I could never do before with any degree of comfort. I can walk without *slinging the leg.*

Respectfully,
ROBT. H. WHITE.

NOTE.—Mr. White presents an interesting and important case, coming, as he does, from the SURGEON GENERAL'S BUREAU, where he holds an important position and may be seen or written to for information

BOTH LEGS OFF JUST BELOW KNEES.

PHILADELPHIA & READING RAIL ROAD.

PALO ALTO, PA., April 21, 1874.

DR. B. F. PALMER.

DEAR SIR:—I have now worn three pairs of your Patent legs. You will recollect that both of my legs are off about one and a half inches below the knees.

I put on the first pair of your legs in 1858, and wore them till 1864, when I got the second pair, on which I have walked and worked, at hard labor, about polishing the engines, &c., &c., ever since, till a short time ago, when I put on the new Patent legs, with Safety-Sockets. The first legs were a great blessing to me, as all my friends know. My house is some distance from my place of duty, and on a rough, hilly road, but I have walked to and from it daily, and can go five or six miles.

On these legs I have been in the constant employ of the P. & R. R. Co., and have been able to support a family of eleven children. The ends of my stumps have been tender, and I never thought I could safely have anything touch them; but, to my great joy, I now put my entire weight on them in the Safety-Sockets with perfect comfort. I can put my weight on either *one* of them without the least unpleasant feeling; and the walking, which on the old legs was *possible*, is now pleasant. I can unloose the top socket, so as to relieve my thighs, and I feel as if really *on my feet again*.

The ends of the stumps feel warm and natural. I find myself unable to express all the gratitude I feel for your great invention and real kindness to me.

Yours, truly,

JAMES McELENNEY.



Two Palmer Legs.

BOTH LEGS AMPUTATED.

MISSOULA, MONTANA, July 8, 1873.

DEAR SIR :—I was so unfortunate as to freeze my feet, and an amputation of both legs, below the knees, became necessary.

Being so far away in the wilderness, I never dreamt then of having my loss made up by artificial limbs, but walked 5 years on my knees. An article, written by Dr. O. W. Holmes, in the *Atlantic Monthly* (a copy of which came accidentally into my possession,) regarding the "Palmer Limbs," awakened in me a keen desire to try a pair, and I wrote to Dr. Palmer about it and sent the first \$100, notwithstanding that all my friends were laughing at me for *such foolishness*. But the limbs came and I soon learned to use them. *I could not straighten out the stumps*, but the use of these limbs and a little exertion soon set them right. I have worn the artificial legs now about seven years, and no *repairs* up to this time have been necessary.

I left Montana Territory in July, 1869, per steamship "Main" for Berlin, Prussia. While in Berlin I worked several months in the Technical Bureau of L. Schwarzkoppf's Locomotive works, employment which required me to stand the whole day after climbing 2 pair of stairs, yet I *never missed an hour to perform my work*, and my new limbs felt quite natural, nor did any one suspect, unless told of it, that I used any other than natural legs.

Crossing the ocean, I travelled around the hurricane decks of the steamers without any cane, as the officers of those steamers can testify. In coming through the dreaded Bitter Root Mountains, from Montana to Oregon, I was several times compelled to walk up, or, rather, climb up steep ascents, where our horses could scarcely pull up the empty wagons. The Patent Socket is a valuable improvement.



Two Palmer Legs.

CHARLES SHAFT.

UNEXAMPLED FEATS, ON PALMER LEGS, WITH BOTH FEET AMPUTATED.

GRAND RAPIDS, MICHIGAN, July, 1873.

DR. B. F. PALMER.

SIR:—I have done *three things* on a pair of your legs worth mentioning.

You will recollect that I lost both of my legs in the war, below my knees, and have worn yours since 1862. The last pair are the greatest success. I said I had done *three things*. I walked in the presence of the Surgeon-General so well that *he could not tell that I had lost a leg*, and he called in some men to see me perform, and no one guessed I had lost both legs. I *built a house*, in this place, doing all the carpenter work myself, in the time it usually takes a good carpenter. I have *won the palm as a skater—both on ice and on parlor skates—in the presence of great crowds.*



Skating on two Palmer Legs.

Yours, gratefully,

FERNANDO PAGE.

AUSTIN, NEVADA, June 10, 1873.

DR. B. FRANK. PALMER.

DEAR SIR:—The leg you sent for John Whalley arrived some time since in perfect order. It fits *perfectly*. He appears well pleased—and he should.

Yours, truly,

M. W. WIXOM, M. D.

THE CHIEF OF A GREAT TRIBE—LA FLESCHE.



CHIEF on Palmer Leg.

This brave Chief relinquished his power as the ruler of his people, to learn the useful arts of Civilization and Peace. Once in a year he goes on the great hunt with his people, when he assumes some of the costume of a Chief of his tribe.

OMAHA MISSION, NEB., Oct. 8, 1873.

DEAR SIR:—The CHIEF, LA FLESCHE, is anxious to go with his people on the hunt to obtain skins for moccasins and robes, sometime this month. If he does not get his new leg, he will go on his old Palmer leg, which he has worn many years.

Nov. 24, 1873.

DEAR SIR:—The Leg was received in good order. The CHIEF tried it on, and was pleased after a trial of it. He now leaves for the hunt on the Safety-Socket Leg.

Yours, truly,

WM. HAMILTON, Missionary.

CAPT. WM. C. GALLAGHER,

PITTSBURGH, Dec. 27, 1873.

DR. B. FRANK. PALMER.

DEAR SIR:—I am happy to be able to inform you that I am well pleased with my new leg, and feel satisfied.

I can walk so well on the end of my stump that I would like to have the Safety-Socket put in my other leg.

I remain, yours truly,

WM. C. GALLAGHER.

19 Water Street, Pittsburg, Pa.

CARTHAGE, N. C., Feb. 2, 1874.

DR. B. FRANK. PALMER.

DEAR SIR:—The leg you sent me came to hand in due time. I am very well satisfied with it, I walk with a great deal more ease than I could with the other one I had.

Yours truly,

G. A. McRAE.

THE HON. JUDGE CHOISELAT.



Judge Choiselat.

PARIS, FRANCE.

DEAR SIR:—M. Choiselat, of Paris, at first made use of two pegs; but WITH SUCH APPLIANCES HIS PUBLIC CAREER WAS AT AN END; THE DIGNITY OF THE ERMINE FITTED ILL THE MIEN OF WOODEN LEGS. He now walks *marvellously*. He recently walked three miles without assistance, and with little fatigue. This gentleman has offered to come before the Society of Surgeons, to testify *by his success* to the adaptability of your invention to the *upper third* of the leg.*

I have carefully noticed Judge Choiselat's attempts *every year*, and seen him frequently.

He PREFERS THE PALMER LIMB TO ALL OTHERS IN EVERY RESPECT.

Before witnessing this experiment, our colleagues had a great predilection for French appliances.

Accept the assurance of my distinguished consideration.

M. DEBOUT, Sec. Société De Chirurgie, Paris.

HON. JUDGE BBOOKINGS,

PRESIDENT OF THE DAKOTA SOUTHERN R. R. COMPANY.

Judge Brookings lost both legs at the same point as Judge Choiselat. He has worn Palmer legs sixteen years, and now takes off a good pair to put on the *new Patent*.

OFFICE OF THE DAKOTA SOUTHERN RAIL ROAD COMPANY.

YANKTON, DAKOTA, April 10, 1874.

DR. B. FRANK PALMER.

DEAR SIR:—I enclose check for two hundred and fifty-five dollars (\$255), balance due you for the new Patent legs. I send you two customers from here that have been to see how mine work. There are large numbers of one-legged men here, and I shall be your *advertiser*.

Yours, truly

W. W. BROOKINGS.

*The PALMER legs made in 1856, were worn by Judge Choiselat until the year 1869, when he remitted \$300 to Dr Palmer for a second pair of legs, which were sent to Paris, from Philadelphia. In 1873 he applied the Safety-Socket, with grand success.

NEW PALMER LEG, ABOVE KNEE.



Walking in Safety-Socket.

The success of the NEW PATENT LEG above the knee is equally gratifying with those applied below the knee. I now present letters received from prominent men, who have for many years worn the Original Patent without the new mechanism, and now walk in the safety-socket. These gentlemen were all so pleased with the first Palmer Leg, as to think it could not be improved. For this reason their testimony is more valuable.

The following important statement of Jos. E. Goodman, Esq., who gallantly lost his leg in the great war, is entitled to special attention.

Mr. Goodman is a brother of the distinguished Dr. H. EARNEST GOODMAN, *President of the Board of Pension Examining Surgeons in Philadelphia.* Dr. Goodman has inspected all patent legs made in Philadelphia, *on U. S. order,* and is familiar with the whole subject. He was among the first of the prominent medical gentlemen of the city to recognize the great value of the *new mechanism,* and the correctness of the *new method* of walking. He advised the application.

LETTER OF JOS. E. GOODMAN, Esq.

In the year 1863, I lost my left leg in the great war, *within two and a half inches of the hip-joint.* In 1864, I first applied the Palmer leg. In the year 1871, I put on the *new leg,* made by Dr. Palmer, and *have worn it with the utmost satisfaction to the present time.*

Learning recently of the great success of the Patent SAFETY-SOCKET for support on the end of the stump, I got Dr. Palmer to apply this leg. *I find the Safety-Socket perfectly comfortable, and a great aid in walking.* I move without the stump sinking down under the weight, and find my gait very much improved. *I recommend the new leg strongly, as being the best in use.*

PHILADELPHIA, July 1, 1873.

JOS. E. GOODMAN,
No. 3416 Race Street.

SEVERE TEST OF THE SAFETY-SOCKET ABOVE KNEE.

SOUTH EASTON, PA., July 8, 1874.

DR. B. F. PALMER.

DEAR SIR :—I give you an account of my trials of the new leg with the Safety-Socket. My right leg is off within about four inches of the hip-joint, and I first put on your leg in 1858. The first leg I wore for *fourteen years*, with the utmost satisfaction.

I find this leg much superior to the first. *I thought it an utter impossibility, in my case, to support any amount of weight on the end*, but looking at your socket, and learning how a man walks in it, and noticing its elasticity, I had no hesitation in trying the leg; *I instantly walked with positive pleasure*. After walking a half hour, I went into the street and walked fifteen squares (nearly two miles), and then up three flights of stairs, in my hotel.



In ascending the stairs, my patent foot slipped from a stair, at a sharp turn, and dropped down to the next stair, with my full weight on the end of the stump. The jar was great, and I thought I must have burst the Safety-Socket, though there was not the least unpleasant feeling of the stump. I found no harm done. The stump now feels warm and natural, as it never did before, and the nervous pains which I had have all disappeared.

The leverage is immensely improved, and I walk with intense pleasure, without any aid but this Safety-Socket. I have stood on the end of my stump, and when my other foot was raised from the floor, *I have lifted a man who weighed two hundred pounds, in a seat weighing about fifty pounds—say a weight of two hundred and fifty pounds*.

Truly and gratefully yours,

JOHN W. ECKERT.

A PALMER LEG ON THE GRAND TOUR.

147 FIFTH AVENUE, NEW YORK, Aug. 1, 1873.

MY DEAR SIR:—I find pleasure in giving you this statement. I lost my leg, above the knee, when a small boy, and purchased a Palmer leg in the year 1872, when I was about to start for a year's tour.

I travelled on this leg over Europe, Asia, and a part of Africa. On the bleak hills of Palestine, and along the rough paths of the Arabs, it never failed me. I ascended the Pyramids and high mountains, and was going constantly for a full year, when I reached Paris. There I sought the best mechanician, to get some small repairs. He was astonished at what the leg had done, feared to attempt the slight repairs, and advised me to go to London. I went to the only famous leg-maker in London, and he, too, admitted the excellence of the leg, but thought he could suit me as well. He made me one of his best English legs, for which I paid thirty guineas, but it was so inferior that I only wore it a few hours, preferring the Palmer leg *when out of repair*, to this *new London leg*. I find your *new* leg much superior to the former patent, I put my whole weight on the end of the stump, and simply feel a pleasant pressure. There is no mechanism that will compare with the new Palmer Patent.

Yours, truly,

F. C. LAURANCE, JR.

PEORIA, ILLINOIS, August 26, 1873.

DR. B. F. PALMER.

DEAR SIR:—The leg was duly received and works well. The Safety-Socket is a decided improvement. There is a pleasantness with it that will make it a success. It keeps the stump from the sides of the limb. I am satisfied.

Yours, truly, JOHN J. JACK.

HOLLIDAYSBURG, PENN'A., August 12, 1873.

DEAR SIR:—I have been wearing the new leg all the time since first putting on. I can walk firmer in it than in the other form of socket. The leg swings well, is precisely the right length, and fits neatly around the thigh.

Respectfully, D. M. JONES.

Col. Jones had worn my leg (above knee) 6 years.

CASES ABOVE KNEE.

SPRINGFIELD MINES, BLAIR Co., PA., August 11, 1873.

DEAR SIR:—The leg I purchased of you came two weeks ago, and I must say that it proved a complete disappointment (but very agreeable).

I did not think it could be made so accurate *without the patient being with you*. He can stand his whole weight on the end and walk *almost as well as with the natural leg*. It is complete in every particular.

Yours, very respectfully,
S. B. ISENBERG.

OFFICE OF GEO. GRATTAN, ATT'Y AT LAW,
HARRISONBURG, VA., June 4, 1873.

DR. B. F. PALMER.

DEAR SIR:—Please make me a first-class leg, with your new mechanism and Safety-Socket. Send by express. I want the *new improvement in your leg, with the end support*. I am not afraid to try it, and have great faith in the result.

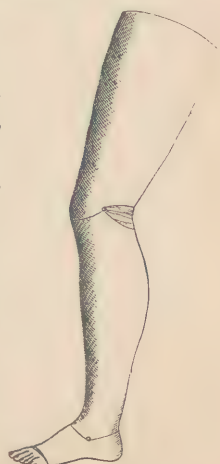
June 23, 1873.

DEAR SIR:—My new leg is at hand. I have given it a trial, and it *works well*.

Yours, truly, in haste,
GEO. G. GRATTAN,

NEW PALMER LEG ABOVE KNEE.

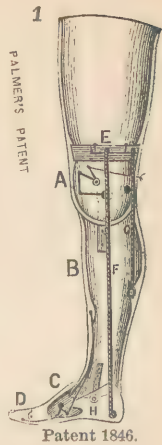
It will be noticed that the mechanism is still kept *within the leg*, as it was in the original Patent, and that the beautiful form which nature sometimes presents is equalled by art. The sculptor is able to copy the natural beauty of the human leg in white marble. I have made it a study to do the same in white willow. The cut here presented is a correct likeness of my model leg of recent make, which is so perfect as to have induced those who could not make the *model* or the *cut*, to *copy* and appropriate them to their uses, and in their publications.



External view.

OLD PALMER LEG ABOVE KNEE:

A cut of the original Patent Leg, full length, is shown, to enable the reader to notice the important changes made in the mechanism. In the original leg a spring is seen in the foot—another spring in the knee. Both are avoided in the new leg, and their functions supplied, by improved springs and tendons. Various other changes will be seen in the mechanism. The tendons and springs being set in duplicate, will last about twice as long as if single, and they are so arranged as to be easily reached and repaired. A person may have no fear of any serious accident to the *new* leg.



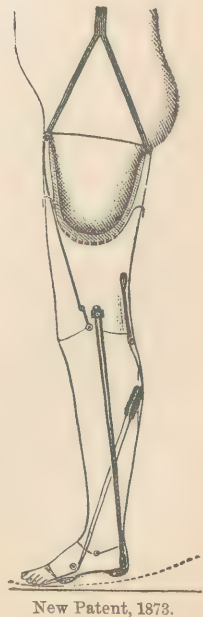
NEW LEG AND SAFETY-SOCKET ABOVE KNEE.

The cut, a sectional view, with openings, gives a good view of the mechanism and Safety-Socket in the new Patent Leg, as applied above the knee. It is essentially the same employed in all cases here presented, only modified to suit the varied requirements of different amputations.

Sometimes the Patent Socket rests *on* the *top rim* of the leg (in case of a short stump); in other cases, it *rests on*, or is *attached to* a point lower down (in case of a long stump.) This is the case both below and above the knee.

The Safety-Socket is perforated all over with holes to ventilate and keep the stump healthy and cool.

The exceeding simplicity of the new Patent leg is seen at a glance.



More than a year has elapsed since I commenced using the new Patent Leg and Safety-Socket in person, and within this time I have made many Legs for my patients, and find much to add to my first announcement of the new advance in the art. A year ago, I wrote faithfully of what I had suffered, seen, felt, and enjoyed, during the time since my leg was amputated, and at that time gave nothing but the simple facts in the strange matter of losing (for thirty-eight years) the use of my knee joint, then straightening and using it, and walking on the sensitive end of a tender stump. I could scarcely credit my own senses, or the statements as they appeared in print, and have proceeded cautiously in applying the legs, and in using my own, as a man proceeds who is feeling his way on strange ground in the dark.

Can so strange a thing be? Am I justified in encouraging my patients to make what seems to them so bold a venture, in trying to do what has so long seemed to be an impossibility? I have kept on searching for facts, always inquiring with solicitude for my patients, despite the accumulated evidences all showing happy results. I had put at stake my reputation, in advancing a theory too strange and too *comforting* for general belief, and had certainly placed my person in peril, if the theory was unsound. I had without aid and against advice performed a surgical operation without precedent, as eminent surgeons assure me, by putting a stiff joint, its rigid muscles and sensitive nerves, to a strain and tension which great physicians thought hazardous, and I had coupled with the surgical operation a mechanical experiment, new and startling, which set at defiance all the logic of the best informed mechanics in the art, was beyond the belief of intelligent wearers of false legs, and wholly at variance with the established theories of eminent surgeons and anatomists. The surgical and mechanical experiment, combined and tried together, at a time when the knee, so long stiff, had been only *partially extended*, and was in poor condition for such a trial, (if the trial could ever be allowable,) seemed, I admit, more like the perilous hardihood of a novice, or the fretwork of a dreamer, than like a well-directed effort which should disclose new and important truths in surgical science and compensatory art.

In all I have done, or written, I have not trusted to my

own senses, or my personal feelings, in making public statements, only when my own experience has fully accorded with that of others, concerning the new mode of walking on the end of the stump.

In straightening the knee—which, as I have said, had been fully bent and stiff for thirty-eight years—I found and know of no parallel case. I have no doubt that hundreds similarly bent, may be straightened and used, as my case cannot be an exceptional one in possibilities.

As I have given the points of most interest in this matter in a former article, I will at this time dwell more upon the result, in the general treatment of my patients during the year, by the new method, than upon the facts already recorded, glancing, as I pass, at the great duty and responsibility of the surgeon in his work.

Amputation has been said to be the bane of a humane profession. In view of its entailed consequences in the past, it may well be so considered. It has not been so much the want of the part severed, that has made it so great an affliction, as the life-long presence of the sensitive and troublesome part of the limb remaining. So morbidly sensitive does the stump become, that the sufferer shields it as he would his eyeball. Several stout men who are now walking with pleasure on the end of stumps that were most sensitive, actually *jumped up*, as if in pain, at a *motion of the hand towards the stump which had not been touched*, and yet, the next minute they stood with positive comfort on the end in the Safety-Socket, again startled at witnessing the fact.

Is it, really, strange that Nature, when properly aided by Art and Science, should *disclose* the perfection of her work, which always *is* perfect? There is a balm for the wound humanly inflicted by the surgeon's knife, and there is no necessity for carrying a sensitive end of an amputated leg, or arm, and nursing its tenderness through life. The time has come when surgical science and compensatory art join with Nature to save from pain in the once fearful operation, and from its most fearful *consequences*. With a suitable mechanical device applied, the end of the stump is found to be as good a point of support as any other portion of the leg. If this were not so, Nature would be found inferior and subservient to Art, which can never be. While a wound is unhealed,

whether it be the scratch of a finger, or the cicatrix of a severed leg, the member is unsound in the part, and should not be used; but when the wound is healed and the part sound, Nature has made good the living part of her mechanism to the last particle. The new formation partakes of the nature of the tissues and texture of the old, and whether the parts be osseous, muscular, membranous or nervous, the portion supplied is complete in its texture and union, and *ready for use*. But a new condition of a member involves and discloses a new mechanical want. The shoe, which the skill of ages has brought to some perfection for the foot, while it *suggests* the receptacle needed for the new-made foot (the end of the stump) is not suited to the new want, either in its plan or formation. The hard sole and soft sides of the shoe must be reversed in the combination, or principle. The bottom, or end of the Socket, must be elastic and flexible, the muscles must be grasped, just above, and held firmly over and around the end of the stump, so as to form a dense and compact muscular cushion. Here was found a great mechanical difficulty when the new method was first tried. It required much patient perseverance to *ascertain*, and more to *produce* the right thing, which was at last found and introduced with charming effect. Nature now reasserts her dominion in again showing the utility of all portions of her animate mechanism. Science and Art come in as subsidiary helpers, when a limb has received a wound, both in healing and in the act of reparation. The bane which was so long and so terribly felt by the mutilated, while compensatory art was in its infancy, now yields to the antidote, which Science and Art disclose, and the future of the sufferer becomes bright in the happy blending of the two professions. The stump, I repeat, becomes, in proper use, a perfect part of a perfect whole; hence the mutilated member is good in every portion that remains. It is simply *shortened*, and a part *gone*, which should be supplied as soon as the stump becomes sound—always within a few months, and often in a few weeks.

The eminent Professors in the great Jefferson College, Philadelphia, have amputated patients in the presence of their classes, to apply the Palmer leg, and, in some instances, have presented the same patients walking perfectly, before the same classes, within five weeks from the day of amputa-

tion. The reader will be aware that such eminent Surgeons as Professor Pancoast (who was the great compeer of Prof. Mutter, and his colleague of former days), and other very distinguished men now operating in the Jefferson College, know what is safe and proper in the application of false limbs, as well as in amputating the natural members; and I allude to this fact in their practice to show that, in the matter of *time*, I have the support of the ablest surgeons in asserting that the stump is ready for use as soon as healed; usually in a season ranging from four to twelve weeks. It is really important to freely use the end of the stump as soon as it is sound, but not before the muscles have formed their new union and combination over the end completely, as sloughing would ensue if the parts were put to strain and tension prematurely. At the time when Nature completes the healing of the wound humanly inflicted by the surgeon, the Surgeon-Artist, knowing the location, condition, and function of every bone, muscle, tendon, nerve and artery, and all the complications of tissues and integuments, newly-woven over the end of the stump, should begin his work with caution and consummate skill. Let this be done surgically and artistically and the great wonder in the future shall be—not that the new method is the true one, but rather that it has taken so many years to arrive at a little practical knowledge on the important subject, and so many centuries to produce a mechanical aid, which is so obviously the *only* thing really adapted to the want—the true means adapted to the end.

Art is long, but its progress is sure. The Human Wheel rolls on, each fellow making a foot-print in progression.

I have now to record a success surpassing all my previous trials of the Patent Safety-Socket, in the case of Sprague, alluded to on page 4, who has the very tenderest stump ever treated by me. Mr. Sprague upon ordering the *second* leg (having discovered the great value of the new method), said to me: “Make this one just as you think best, without regard to my former suggestions and fears.” I, at once, decided to put the leg on *without side-joints*, avoiding all pressure above the knee—as he has a stump about eight inches long. This would not do in his case, without the Safety-Socket, as he cannot bear *pulling* upon the end. I applied the leg, and he remained to give it a good trial. He

authorized me to give an account of the success, and refer to him, saying that he will write to *all who address him*. This last act, and proposition, are very generous, as will be seen when I inform the reader that he has paid me three hundred dollars for two legs, and makes this proposal as an earnest of his appreciation of the service, and his good will to his fellows who need the appliance.

Mr. Sprague has walked fifteen squares (over a mile), with only a small cane in his hand, and with his weight, as he assures me, *almost wholly* on the end. He states that any amount of walking does not hurt his stump, or the nerve, but the moment the Socket is *taken off*, and the blood presses to the end, it feels uncomfortable, though it is daily improving. He came here expressly to have the nerve removed by a surgeon, but he has assured me that there is now no need for it. I shall take care that he shall not be less happy in the use of the leg as time rolls on, than he is in starting off.

It is pleasant to receive such patronage, beyond the usual satisfaction in a business way. There is, in this case, and the case of Mr. Taylor, who sent him to me, and who twenty-eight years ago put on the *first Palmer leg*, a singular coincidence, concerning the two cases. When making the first leg, to apply below the knee, I was impressed with the belief that, when practicable, the Patent leg should not go above the knee to encumber the thigh, and cause a diminution of the muscles that needed development. Then, not having the experience which taught that there must be numerous *exceptions* to that sound rule, I put that leg on a stump, *four inches long*, without side-joints, and he so wore it for many years, until he left it with me. I have shown it to Mr. Sprague, whose *second* leg is made with the same idea, on the same plan, but with the addition of the Patent Socket.

The following letter, just received from Mr. Taylor, completes the evidence.

WINTERSSET, IOWA, May 3, 1874.

DR. PALMER.

DEAR SIR:—Mr. Sprague has returned and I am delighted with his success. I now want the Safety-Socket Leg. (See pages 4 and 37.)

Yours, truly,

A. D. TAYLOR.

To show the cause of my delay in making this progress in the art, I must again allude to my own experience. The surgeon had not before amputated a leg, and had no thought beyond saving life, and such portions of the leg as might be retained, not as a means of walking, as there was no artificial leg known to him, but simply as a part of the human organism to be carried about tenderly on crutches. It was properly bent at the knee to *heal*, but when healed was not straightened as it should have been—hence permanent stiffness of the knee joint followed. The bent knee forbade an attempt at using the end for thirty-eight years, when, as stated in another article, I straightened the joint, and in extending it, found the great secret in the surgical and mechanical art.

I supposed that the great surgeons who had given attention to the subject possessed the best knowledge of the condition of the stump, and, as no one of them ever had published such a possibility, or spoken of it to me, either in this country or Europe, it was not strange that I should accept their belief, and while in no condition to try a new method, act upon the best principles before known, especially as my own limb was excessively tender.

In order to place this matter in its true light and satisfy the general reader, who naturally looks to the Surgeon for some advice, it is proper here to show that the opinion now advanced is not in conflict with the march of progress in the art, and not at variance with the course it has taken in all the past.

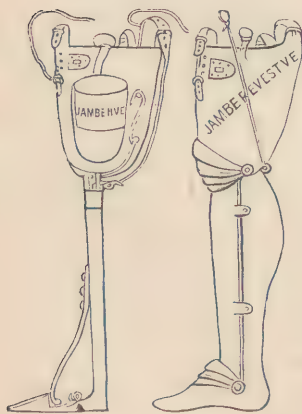
The great Surgeon Paré, and his colleagues in the sixteenth century, while recognizing, in pain and mortification, the lack of skill requisite in treating their amputated patients, did nevertheless yield their opinions, and shape their practice to the condition of the art, then barbarously handled, and from that time till the present the maker of limbs has been answerable for the place of election in amputations.

To fully establish this fact, it is only necessary to say that in the year 1851, I was invited to Paris by the great Surgeons Roux and Lallemand, whom I met in London at the first Great Exhibition, and that I was by them and by M. Debout introduced to the Société de Chirurgie, the most learned Surgical Society in the world, to give evidence of my claim

as an INVENTOR, and as the author of NEW RULES for amputation. I presented to the Society my models and specification with the new rules for operating which had been accepted in this country in 1846. A committee of the most eminent surgeons of the world was appointed to examine and report upon my invention, and the new rules. This committee spent more than twelve years in the investigation of two great questions, concerning amputations and limbs, and reported at great length, fully confirming my views and adopting my mechanism.

Among the great surgeons who then examined and pronounced upon my invention, were Baron Larrey, M. Velpeau, M. Debout, M. Roux, M. Lallemand, of Paris; Sir Benj. C. Brodie, Sir Wm. Fergusson, and Sir Wm. Lawrence, of London; Profs. Mott, Parker, Mutter, Pancoast, Warren, Bigelow, and others of the United States.

ABSTRACT OF THE REPORT OF THE SOCIÉTÉ DE CHIRURGIE OF PARIS, ON ARTIFICIAL LIMBS AND AMPUTATIONS.

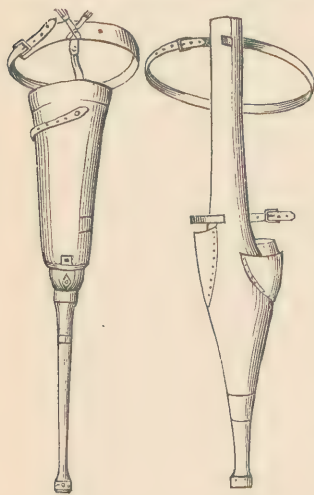


In time of Paré.

THE OLD SURGEONS in their art, always knew the end which they were pursuing, and did not hesitate to introduce, in its development, everything which could conduce to that end. Accordingly, the investigation of *remedies for mutilations* figures in their works equally with the loss of members, and that too at a time when mechanical knowledge could only furnish the crudest attempts for this branch of surgical therapeutics.

Let us take, for example, the designs furnished us by Ambrose Paré, the most complete of all authors, in this respect. Now that the *progress of the mechanic arts has furnished unquestionable aid*, and can produce something better,

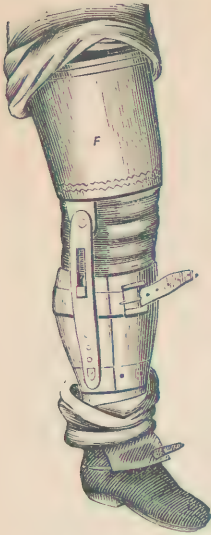
all these notions have disappeared from our medical literature. *Let a surgeon be consulted in regard to treating the simplest amputation, and he knows not what to advise, for he is ignorant both of the trials which have been made, and the state of art in what especially concerns this point. The surgeon is forced to send his patients for advice to the makers of artificial limbs, and to give them up to their attempts.* Still there is a gap which must be filled; and we have not failed to make mention of the most important objects exhibited by inventors.



AN important question, whose solution has been long sought, is that of the services which automatic appliances can render to those who have lost limbs. Despite the special works published on this point of practical surgery, *the truth is far from having been determined in all respects.* Thus, notwithstanding the greater danger to the invalid from amputation at the place of election, surgeons do not hesitate to prefer it to amputation at the inferior third, in the case of the young and the poor.

This is the judgment formed by Velpeau, in 1839, in his *Treatise on Surgery*, and which he repeated, in 1841, in his report to the Academy of Medicine upon the *memoire* of Messrs. Arnal and Ferd. Martin. We thought that the numerous examples of the service rendered *since that period*, had led surgeons to no longer make any distinction between rich patients and those not possessed of a fortune. *We see, with regret, that it is not so;* and that, as in the time of Ambrose Paré, the principles of surgery are sacrificed to the facility of making the patient walk on the peg. *The advance, taken by automatic mechanism in the question of amputations of the leg has led us for a series of years not to let any occasion escape which might convince us of the utility of the artificial members, for, on the solution of this point depends the return of surgeons to the principles essentially conservative of their art.*

Before explaining the different considerations which no longer permit us to sacrifice the most sacred interests of humanity to a question of mechanical convenience, we must make mention of the different models of artificial limbs which have been given us by manufacturers.



Verduin.

In 1696, a learned Dutch surgeon, Verduin, gave to the art a model of an artificial limb. This limb was composed of a wooden foot, on which were fastened two pieces of steel, going up to a level with the articulation of the knee. A copper boot encased the stump, and was fastened by rivets to the side-pieces. * * *

Louis, in his report to the Academy of Surgery, misunderstanding the tendency of the conclusions drawn by Verduin, rejected both the method and the apparatus.

We know the power which the principle of authority had at that period. The decision made by Louis caused the abandonment of Verduin's appliance, and a return to Von Söllingen's. All the surgeons of the eighteenth century, those of Italy and England as well as France, with the exception of Ravaton, endeavored to make their patients walk with appliances taking their point of support around the knee. None of these, *despite their varied forms, were found to answer, and even more than a century was passed in fruitless attempts.* *

Our learned brother, M. Goyrand, was led to open a new era in the construction of artificial limbs, in *changing the point of support to the perineum.* This improvement henceforth entered into automatic appliances in current practice, in 1831, especially for those amputated at the inferior third of the limb.

"Truths are wedges, to be driven to the head," said Fontenelle. *The great safety of amputation above the ankle, demonstrated daily by numerous facts announced officially at our Academy, has not been sufficient to popularize the operation at the lower third.*

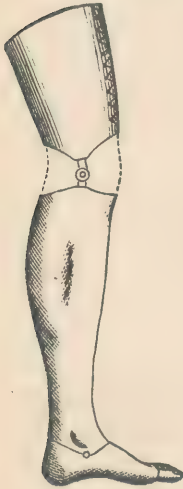
When a truth has been repulsed by the very persons who ought to have comprehended its importance, it must be a long time before it is seen again to enter the domain of science. But this return must take place because numerous and patent facts increase evidence.

Before speaking of facts, let us look for a moment at the different models which are in the Surgical Arsenal. First come the models of Messrs. Palmer, Bechard, and Mathieu. Those of DR. PALMER, are most simple and ingenious. Those of Messrs. Bechard and Mathieu have, as a base, two pieces of steel encased in leather, the foot being held raised by springs, as in the apparatus by M. Ferd. Martin.

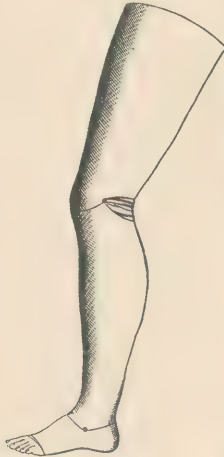
In the PALMER Limb, the action of the flexor spring is counterbalanced by an extensor-tendon, so that the foot aids in walking. Charged with the duty of making a report on the magnificent appliance, you will permit us to reserve for *that* work the explanation of the exceedingly simple mechanism of the American artificial limb.

AMERICAN LEGS.

FRENCH LEGS.



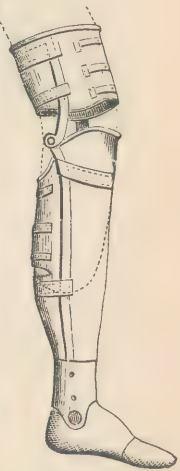
PALMER.



PALMER.



MATHIEU.



BECHARD.

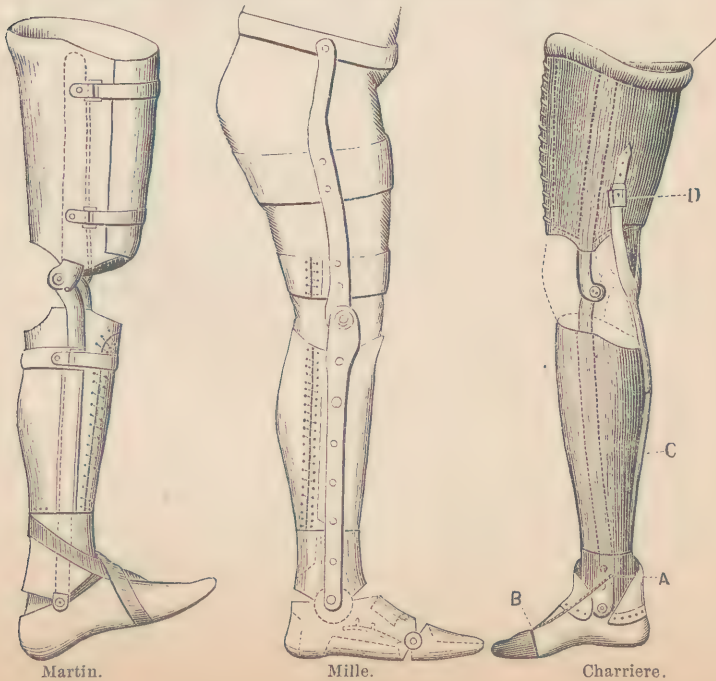
I. PALMER LIMB.—The first person whom we saw walking with this artificial limb was Dr. Palmer, the inventor of the American Limb. The talented Philadelphian had his leg amputated at an age when the loss of the member is less to be regretted than the ulterior consequences. Desirous of concealing his loss, he set himself to work at the construction of an artificial limb. Not content with the different models given him, and endowed with great mechanical genius, he began to look for the means of constructing an appliance which would not only conceal his loss, but enable him to walk easily. Success has crowned his efforts, for it is diffi-

cult, even when one sees Dr. Palmer walking, to recognize that he uses an artificial leg. In 1851, on returning from the World's exhibition, in London, the inventor was introduced to the *Société de Chirurgie*, and a good number of our colleagues could not tell which limb had been amputated.

A second example of the fine action of the Palmer limb, is furnished us by the *lady of one of our brother physicians* and friends of London. This case is of the greatest importance, from the fact that this lady had made use, successively, of appliances having their point of support at the perinæum, and thigh, and she does not hesitate to accord the preference to the plan of PALMER.

Here is the acknowledgment which has been transmitted :
 "At my very first trial of Dr. Palmer's limb, I was convinced that I had found what I needed so badly. *Since 1851 I have used no other appliance.* I walk easily three or four miles without fatigue; I go about my house all day; finally, I have again taken up horseback exercise, and ride nearly every day. The point of support is *above and below the knee*, and I give this the preference over that of the appliances of Weiss, and Ferd. Martin. I have found beauty and utility united in the Palmer limb; many of my new acquaintances do not know that I have undergone amputation."

MODELS OF THE BEST FRENCH ARTIFICIAL LEGS.



Martin.

Mille.

Charriere.

III. *Amputation at the inferior third of the limb—Successive employment of French and American limbs.*—M. Jobert performed the amputation. The limb was taken off above the ankle. The wound having healed, the patient, then fifteen years old, made use of an artificial leg furnished by *Charriere*. As this young man had suffered from having the point of support at the perinæum, he addressed himself to another maker, *M. Bechard*. The latter, believing that the excoriation of the tissues resulted merely from a fault in the disposition of the upper padding, constructed the new leg upon the same model. This appliance, despite the care taken for its prevention, *cut the skin of the patient*. He then got an artificial leg on the PALMER Model.

The patient liked the change of the point of support in the American limb so well, that he has since ordered a new Palmer limb. Thus, in sixteen years, he has made use of two models; he has tried each the same length of time, and, like the English lady, he does not hesitate to give the preference to Palmer's.

IV. M. CHOISELAT, thirty-two years of age, was accidentally thrown upon the rails of the Eastern Railroad, in the interior of the *gaze de Meaux*; a train in motion passing over both legs, which were literally ground to powder. He was carried home, and, being examined, it was agreed that a double amputation was necessary; the operation took place next day by M. Houzelat. Fifty days after the accident, the wounds were healed. It was agreed that he should try the AMERICAN LIMB.

July 16th. M. Choiselat made use of the PALMER LIMBS for the first time; notwithstanding the use of pegs for two months and a half, he soon learned the use of the new apparatus, *rapidly and easily*; on the third day he went down to the garden and back again to his room, leaning on an attendant's arm.

The next (fourth day) he went in a carriage to the railroad depot, took the train to Chalons-sur-Marne, and made ten leagues by post to St. Menehould. There, alone and supported by a cane, he visited some of his friends, who were astonished at the result.

September. M. Choiselat is passing the vacation in the

country. Assisted by a cane, he walks for an *hour and a half without much fatigue.*

March, 1857. With the aid of a cane, he has *walked three and a half miles in one hour and forty minutes.*

During the whole time, the progress has been daily continued and sensible. To-day (November 1858) he walks easily. He wears his limbs fifteen hours successively; *he walks without a cane*, stoops, and readily picks up objects from the floor; he sits down and rises without aid. M. Choiselat asserts that he has not been arrested in the performance of his vocation. Finally, *the reparation is as perfect as possible.*

In order to gain a better understanding, M. Choiselat had made for him one of Mille's limbs, modified by Xavier, an old workman of Charriere's. This artificial limb is made, like the Palmer leg, of willow, but the thigh-socket goes up to the perinæum, and offers a point of support at the ischium. The following is the result of the comparative examination of the two appliances. *The Xavier leg, although of equal weight with Palmer's, fatigues more in walking, cramps while in a sitting position, and permits of arising less easily, as well as of entering and descending from a carriage.*

The PALMER leg is light, is easily extended by the movements of the short levers (one of the stumps is three inches from the knee-pan, the other four inches). According to Judge Choiselat, the thigh-socket, which takes its point of support above the small part of the superior segment of the limb, offers a sustaining base equal to that of Xavier's apparatus, which goes up to the perinæum.

Finally, an important matter—the PALMER limb is the one *which has been used longest without being repaired.*

We have carefully noticed Judge Choiselat's attempts every year, and his testimony has the greater value from the fact that, before witnessing this experiment, our colleagues had a great predilection for French appliances. * * * *

Such are the facts of which we have been witness.

DEBOUT, Secretary, *Société de Chirurgie.*

For a quarter of a century I have left the surgical considerations principally to surgeons, supposing that those whose vocation had brought them daily to contemplate such

matters could, better than myself, lead the way in true progress in the art to which my vocation is so nearly allied. But, I find that the most important question in this great matter seems not to have been raised by the great surgeons since the time of Ambrose Paré, in the sixteenth century. This must be my excuse for thrusting the pronoun I forward, as I now do, coupled with the assertion that hitherto I never intended to put into print my personal experience in the matter.

“What can we reason but from what we know?”

One not similarly circumstanced cannot know how another feels. Each knows his own but not his fellow's feeling. If, however, in a large class of persons afflicted, there is found one common cause of an unhappy or an uncomfortable condition, should it not be fully set forth, that the condition may be ameliorated? With this thought pressing heavily on my mind, I now return to my patients and note a most interesting case in point. James Tanner, Esq., appears as the first walker upon *two* Safety-Sockets, the hero of the first pair of New Palmer Legs, on the ends of short and tender stumps—an act requiring more nerve than facing the cannon did, as that aimed at legs *only*, while this shock struck at the base of sensibilities, and seemed to mock the human understanding. The mind of man is not so easily controlled as his physical members. I need not say that I felt much anxiety before seeing Mr. Tanner walk, and, though conscious of his success, I felt more anxious still when he first arose in the Safety-Sockets and *jumped about the room*. I advised him on receiving them to wear the old legs home, and use the new ones cautiously at first; but no, he insisted on leaving the old legs with me, which he did, and has not since used them. He went home on the *ends of his stumps*, and the next day took his place on active duty, in the Collector's Office of the Custom House, with hundreds staring at him, and wondering at his movements. I am aware that some persons will still fail to accept this important truth, and will ask for more and still more evidence. This evidence I can give, almost without limit, as my patients are counted by hundreds of intelligent persons, quite a number of them having double amputations. I can refer the doubting reader to some person near him, who will remove his doubt. In this important matter I have not

yet made known some of the best effects, first felt by myself, and then by my patients who have voluntarily spoken of the same happy changes in their general condition. All that I have written has not more than touched upon the greater, the paramount gain secured for the sufferer, and cannot here be discussed at length, but will be set forth fully in a future article.

Scores and scores of amputated^e persons hearing of this new method of walking, have written, asking me to inform them if so much can be *possible*! To all such I have replied, but during the first year I wrote *fully* to but one man; that person is O. F. Alley, Esq., who, being in California, could not come so far to see for himself, and as he asked for the full facts, I gave them without exaggerating or suppressing the exact truth. Upon reading my letter I almost feared to send it, lest he should think, as my friend and patient Commissioner Hibler thought, who wrote thus: "When Dr. Palmer first suggested walking on the end of the stump, I thought it was the chimera of a brain allowed to dwell too long upon one subject."

But, at the time of this writing, Mr. Hibler had found comfort in my new invention, and "method" in my madness. So I ventured to let one letter go out written without reserve, but resolved not to repeat it unless the issue should be pleasant in every respect. That letter elicited from Mr. Alley the following reply:

MARTINEZ, CAL., June 10, 1873.

DR. B. FRANK. PALMER.

DEAR SIR:—I am exceedingly gratified to learn that you have made so many important improvements in your original artificial leg. It seems almost impossible to believe that a stump as *sensitive as mine* can ever be walked upon, and yet, when I read your letter I am forced to believe that such is the case. I have read, re-read and read it again, and it invariably causes nervous contractions in the stump, peculiar, I suppose, to all persons who have lost a limb.

Please find \$150 enclosed for the new leg.

Yours, truly,

O. F. ALLEY.

MARTINEZ, CONTRA COSTA Co., CAL., Dec. 17, 1873.

DEAR SIR:—My new leg with Safety-Socket, came to hand December 1, at 8 o'clock, P. M. Before retiring I tried it on, and it fitted me beautifully. I walked around the room, bearing my *whole weight upon the end of the stump*.

When I took the Leg from the box I admired its beautiful mechanism, but I said to my wife that *I didn't see how I could wear it*; nevertheless, I have worn it from that time until the present with increased satisfaction and pleasurable emotions; *the sensation upon the end of the stump being pleasant*.

I think the new Leg a marked, radical and decided improvement on the old Leg, which I considered very near perfection. The action is more natural, and there is an elasticity in the step excelling that in your old style of leg.

I am so well pleased with your new Leg, that I want every one who is so unfortunate as to require an artificial leg, to have one, and recommend any thus afflicted to you.

I have two legs of your make which are almost as good as ever.

Yours, respectfully,

O. F. ALLEY.

B. FRANK. PALMER, LL.D.

Much remains to be told, exceeding all yet written, about the benefit of walking on the end of the stump. I am convinced that the relief and advantage to the entire limb, and to the whole system, surpass the mechanical gain, great as it is, to the sufferer. This use of the stump changes the whole feeling and condition of the mutilated member. The end is kept warm in winter by this new use of it, and it is freed from the sharp pains, which, lightning like, have shot forth from the tied ends of twitching nerves, through the texture of torpid integuments, and atrophied muscles of a half-palsied limb, to the ends of the very hairs! Thousands of sufferers will feel these pains until the end of the stump is thus used. Many mutilated persons do not know what it is to feel really comfortable, or natural, on the entire side of the amputation, from the end of the stump to the crown of the head. Shall I, then, from fear of unjust criticism, by those who have not experienced these feelings, suppress a truth which is so essential to the comfort of fifty thousand sufferers who may easily find relief? No! A thousand times No!!

PART SECOND.

In commencing PART SECOND of my book, I find the strongest incentives to resume the work with the thought which found expression on page sixty-four, Part First.

I am fully convinced that any language at my command cannot be made to urge the importance of my theme too strongly. As I have proceeded cautiously in my work, with hand and foot—the one working and the other walking—and as the thing made now moves in harmony with the human organism, I will entitle my two-fold labors,

STEPS.

Steps, in Science or Art, like those of the human limb, in progression, may be successful or unsuccessful, true or false. We have felt the serious consequences of a false step of the human foot, and we know, for we have also felt, the thrill which has been sent to the heart by the unhuman action of the ancient substitute, with its painful pressure on the great nerve-centers, as well as on the excoriated cicatrix of the tender stump, while we have traced, with some satisfaction, the advance movements of more modern inventions which, while they were not perfect steps, in the march of progress, still they were so successful counterfeits as to pass for correct aids in walking, just as the perfect counterfeit bill becomes a welcome circulating medium until its real character is known, and the true bill supersedes it. In age, as in infancy, the mutilated man has crept before he walked.

WHY?

Why it is that intelligent surgeons, who have seen and felt this great want, have not instructed the mechanicians on this point, and suggested or *demand*ed this important step in Compensatory Art, I am wholly unable to imagine; and if I had myself been sooner in a condition to have dared the experiment against all recorded surgical wisdom, I would now blush to come forward with my discovery, as the future observer will wonder at the long delay of this most important invention in the art, which has only required a determined and well-directed effort in the centuries past to establish the principle. Want of such an effort has involved a great deal of pain, in imaginary and real forms, and caused stout, courageous men to go through life feeling their way cautiously along, like cowards in the dark, lest they *touch* the point on which they should manfully stand, and walk.

There is much appropriate meaning in the word *steps*, for it will be found that, hitherto, all artificial legs have been in fact, as in name, *false*, and all of their goings have been false steps, which I now propose to change to true steps. The application of these legs, which, in design, as in operation, have been in antagonism with natural laws, must now be abandoned, and the new method and mechanism substituted, since an advance Step has been taken in Surgical Science, demanding a corresponding one in Art. The artist must copy, not counterfeit, the divine organism. Nature is the true teacher; man, at best, her obedient pupil. The surgeon, or the mechanician, may, through ignorance, retard the recuperative or locomotive action of the mutilated sufferer, but Nature will finally triumph over these errors, if life continues. The unskillful incisions, whether made by the surgeon in the flesh, or by the mechanician in the wood, will ever be pointed out by an unerring finger, until, under better treatment, even these ills shall be mitigated. The inventor will not fall behind the onward march of Humanity, Science, and Art.

The end of the human leg, (whether it be found at the place where originally fixed as the point of support, or at a higher point, where a new outgrowth and union of similar substances has been divinely combined to make good the

last particle of the part saved after mutilation) is the obvious and natural point of support. Conditions may properly modify the means of adaptation, in the hands of the mechanician, but no degree of tenderness, or nervous sensibility, can change the law of nature on which my theory is based, in exceptional cases where the operators have been at fault.

The reader who has patiently perused the sixty-four preceding pages, in Part First, may wonder that I again take up the burden of my argument at the "end," and make it the second *beginning*; but if he will read the letters addressed to me in a single day, by intelligent men, who still, after months of tedious correspondence, go on with doubting questions, or reiterate their total disbelief in the new method, he would, if in my place, attempt, as I now do, to answer the army of unbelievers in some way less laborious than writing letters to each one singly.

Some men after a year of positive unbelief, finally obtain so much information from myself, and my patients, as to think that *they* could apply the new principle and *save expense*. They have attempted to violate my patent, in ignorance of the skill required to succeed, and, as will be supposed, they have made total failures. By such failures some have concluded that they were right in their first impression, and that the thing is "impossible." These men have appealed to some of my patients, who have given them positive assurance of my ability to satisfy them, while I have written to such persons that, if they will *come and try the new principle*, I will make no charge if it is not a perfect success.

I now present a sample of the correspondence daily in hand, to show cause for still harping on one idea to the "bitter end," and I will continue faithful in effort until my story is believed, in its entirety.

If it has taken half a lifetime to gain a little true knowledge in my art, it seems likely to require completion of the life-work in teaching the simple truth successfully to those who should hail the approach of the tidings on the wings of the wind. It would consume all of my time to talk and write, in giving answers to the questions of those who ought, at once, for their own comfort, to accept the truth made plain by their mutilated fellows.

I throw before them new evidences, from those who

once raised the same doubt, which they now have, hoping that they will be able to discern the difference between the intelligent statements of well-known and honorable men, and the manufactured "certificates" of numerous aspirants for patronage who laugh at my new theory.

"OPEN TO CONVICTION."

We find a gentleman, who is the Secretary of a great State, writing now as he did a year ago, as follows. He is, at the end of a year, just at the stage that nearly all who have preceded him reached by degrees. All are first certain the Safety-Socket will not do for *their tender stumps*; then they are "open to conviction," then they put it on, and wonder that they ever doubted, and finally think that leg-makers ought to have known how to do it before.

STATE OF ———, SECRETARY OF STATE.

———, June 27, 1874.

DR. B. FRANK. PALMER.

DEAR SIR:—Have received circulars from you calling my attention to your new Patent "Safety-Socket." I have but little faith in this mode of wearing Patent Legs—in my own case I have *none*, my stump is too tender, I verily believe, to admit of the use of the new idea. The amputation, I think, was not a good one.

What is the price of this new leg? If you had a plaster cast of my stump could you make a good and easy fit? Though an unbeliever in your pet theory, I am open to conviction.

Yours, truly,

———
SECRETARY OF STATE.

[NOTE.—Come here, Mr. Secretary of State, and if I do not set you successfully and comfortably on end, I will charge you nothing.—See page 37, Part First.]

Near MEMPHIS, TENN., June 26, 1874.

DR. B. F. PALMER,

DEAR SIR:—I have received your circulars concerning your elastic socket invention, but really my health has been so utterly broken down, that I have not been able to muster the courage to attempt to communicate with you. I have showed your circular to several of my friends, crippled like myself, and always been amused to see them shudder on barely entertaining the idea of resting the weight of the body upon the stump. I have always told them if a man of Palmer's stature can do that, I know I can. A short time since, in my dining-room, when I wished to use something in both hands, I folded a simple linen table cloth and placed the end of my stump in it, and was surprised at the pressure I made on it. I met with you one evening in the gentlemen's parlor of the St. Nicholas Hotel in New York.

If my health improves, I shall soon send for a leg.

Very respectfully,

G. O. BUNTYN.

NASHVILLE, TENN., June 28, 1874.

DR. B. FRANK. PALMER.

DEAR SIR:—Yours of the 12th inst., with pamphlet, came to hand a few days ago. I have read the pamphlet, and afterwards let five of my unfortunate friends read it. They seem to think as I do, in regard to walking on the end of the stump, *that it is a heavy undertaking*. Yet, if one can do it, why should not all of us? I have been practicing to see how much weight I can take on the end of my stump, and I find that I can lay a cushion on a chair and take my entire weight (187 lbs) on it, although it is *extremely tender*, much more so than you would probably suppose. I am very anxious to try your patent, as I am very tired of——leg.

I want the leg as soon as possible.

I am, very respectfully,

W. L. HORN.

FOREST, OHIO, June 26, 1874.

DR. B. F. PALMER.

DEAR SIR:—I have read and re-read your book, but my stump being so very tender, it seems that it would be *impossible* for me to bear my weight on the end. I have, however, been trying some pressure by pulling on it, with the end of the stump in the palm of hands, and also by placing a cloth over the end and pulling on it, and find by using it in this way, I can bear more pressure every time I try it, therefore I have come to the conclusion that by usage, my stump will toughen so that I can wear your leg with Safety-Socket, notwithstanding the discouragement I have had from those who have lost their legs, and have worn false legs of others' make for some time. There appears to be something wrong; my stump always has had constant twitching, jerking and burning pains, which seem to be caused by something close to the end of the small bone where the two flaps meet on the outside of the stump; the slightest touch of the finger on that spot will cause great pain to shoot apparently through the foot. You have the situation of my stump as near as I can give it; if you think I can wear your leg with the Safety-Socket with any degree of comfort, and are willing to warrant it, I will send profiles and measures.

Yours, truly,

JOSEPH MOORE.

[NOTE.—I will send the leg, and warrant satisfaction; see page 37, Part First.]

MENDOCINO CITY, CAL., June 10, 1874.

Prof. B. F. PALMER.

DEAR SIR:—I have read your new pamphlet with surprise, for such a thing has never seemed possible to me, and my present limb seemed to have reached as near perfection as anything could well do. I congratulate you on the result of your labors, and hope they will be as profitable to yourself as they have been valuable to others. Make and send the new patent leg to me. Please find \$150.

Yours, truly,

H. L. PIKE, Colonel U. S. V.

Ed. West Coast Star.

CASES RECENTLY TREATED.

We will now notice some recent and important cases *treated*, and then in Part Third of the book we shall notice the preceding cases again after treatment.

The next letter presented, page 72, happily corroborates my personal experience, and furnishes another evidence of the magnitude of the work, and its life-cheering results.

This new method of using the end of the stump sets all the mechanism of Nature into use, from the point of amputation to the body, and brings about a complete change in the tone of the muscles, tissues, integuments and nerves.

In *feeling*, as well as in the *action* of a mutilated limb, there is a new condition of all the parts, reaching up the side and along the body on which it acts. Feeling this great comfort, I give the facts for the benefit of those similarly situated.

Thousands of mutilated persons are now suffering hourly for want of correct surgical and mechanical treatment, which has not been given in the past. Many suffer much more from the presence of the remaining portion, almost palsied, completely useless, and nervously painful, than from the absence of the part severed. The great evil resulting from the complex ills deranges the harmony of the whole system. The sufferer struggles under an affliction which he does not understand, and is often ready to yield to the constant sense of a hidden spring, which imbitters the source of all his enjoyments. Some heroically battle with these ills, believing that the suffering is necessarily inseparable from a mutilated condition. Walking, standing, sitting, reclining—every moment of action or inaction—awake or asleep, the effect of the hitherto hidden cause has disturbed the whole organism. Free circulation of the vital fluids, and action of the members, are inseparable from a comfortable condition of the human body. To sever an important part, and then leave the remaining portion of a limb in an abnormal condition, for want of proper care and use, is to insure discomfort, if not misery, to the victim of the knife. Humanity, thus mutilated and bound, becomes existence rather than life; the day is comfortless, and night refuses the solace that is sought in repose by the sufferer, bringing nervous tossings and troublesome dreams instead.

ANDERSON, INDIANA, April 28, 1874.

DR. PALMER.

DEAR SIR:—I am glad to hear of your improvement in the artificial leg.

My own knee had been bent for twenty-seven years, so (as yours had been bent thirty-eight years) I thought I would try and straighten mine. I went to work at it, and took the leg you made for me nineteen years ago (to go on the knee), and put a piece on the top, raised the joints, and fitted the stump in a socket, and have been walking on it. I now have good use of the knee joint; I go up stairs, one foot over the other, carrying a bucket of water.

My joint was as weak as a baby's, when I first walked, but it is now getting *very strong*. If I had a new leg, with the Safety-Socket, I could walk perfectly. I want you to make me one, soon as possible.

Respectfully yours,

P. HAWK,

PHILADELPHIA, May 18, 1874.

DR. B. FRANK. PALMER,

SIR.—I take pleasure in adding my testimony to that of others, who, I have no doubt, feel as grateful as I for the inestimable service you have done them.

On the seventeenth day of September, 1862, I had the misfortune to receive a wound in the right leg, at the battle of Antietam, fought on that day, which rendered amputation below the knee necessary. On the fourth day of March, 1863, I commenced wearing one of your legs, and although my stump is but three inches below the knee, I never found any trouble in walking. I wore the leg until March, 1871, visiting California in the meantime, where I remained three years. On my return from California, I procured the leg which I am now wearing with the improved Safety-Socket. This socket is all the Palmer leg required to make it *perfection*, and I would advise all unfortunates, like myself, whether their legs be old or new, to have this improvement. They will find not only a great improvement in their walking, but will find they can walk much further without fatigue. I am a printer by trade, and work on an average ten to fifteen hours in the twenty-four. I stand at my case while working, and never think of sitting down. I will

here state that the old leg, which I first wore in 1863, is now, after ten years service, in good order.

Hoping this will help to enlighten all unfortunates like myself, as to the best substitute for the loss of a limb, I remain,

Yours, respectfully,

JOHN P. DUFFY,

Late Co. O, 28th Penna. Vols.

[NOTE—Mr. Duffy, before trying the new idea, went to his surgeon, DR. H. EARNEST GOODMAN, whose name will be seen on page 44, Part First, and asked him if it would be *safe* to put it on. Dr. G. said “Yes, perfectly safe.”]

RENICK, RANDOLPH Co., Mo., March, 11, 1874.

DR. PALMER.

DEAR SIR:—I send you (according to your request,) one hundred dollars on account, and hope to get a good leg. I have confidence that I will get a good leg, for I have written to several men who have your Patent Safety-Socket, and their replies have been satisfactory.

Yours, truly,

WM. MYRTLE, P. M.

DR. PALMER.

DEAR SIR:—I received the new leg which you sent me, and after giving it a fair trial, I find it a great success. I wear it all day, attend to the Post Office and walk a long distance—night and morning. I travel around with perfect ease, and my acquaintances hardly notice any difference in my legs. No money could buy the leg if I could not get another like it.

I can recommend your Patent to be the best in use.

Very respectfully,

WM. MYRTLE, P. M.

MIDDLETOWN, PENNA., May 10, 1874.

DR. B. F. PALMER.

DEAR SIR:—I received my artificial leg safely, and have worn it now for seven days in succession. The stump rests on the Safety-Socket very nicely, and works splendidly.

Yours, respectfully,

WILLIAM T. HARLEY.

Office of the TREASURER OF THE COUNTY OF WELLINGTON,
ONTARIO, (NEW DOMINION), GUELPH, May 1, 1874.

DR. B. FRANK. PALMER.

DEAR SIR:—I received the new leg all right. The Safety-Socket is without doubt a vast improvement, and an immense benefit.

I am, sir, yours, respectfully,
WM. REYNOLDS, Treas.

SANDY HILL, NEW YORK, April 30, 1874.

DR. B. F. PALMER.

DEAR SIR:—In accordance with your request, I will write and let you know how the leg goes. I wore it about a week without anything in the socket, so as to give it a thorough trial.

The stump gets tougher; so far, it has not chafed, and I am in hopes it will not, until I get so that I can bear all my weight on the end of the stump.

Yours, respectfully, JOHN HILLS.

RED OAK, IOWA, April 19, 1874.

DR. B. FRANK. PALMER.

DEAR SIR:—I will inform you that Mr. Davenport has received his Safety-Socket leg, all right—finds it a perfect fit—walks splendidly on it, and says he is under many obligations to you.

Yours, &c., H. H. PALMER.

[NOTE.—H. H. Palmer, Esq., has the leg also, and recommended it to Mr. D.]

HOLLIDAYSBURG, PA., June 25, 1874.

DR. PALMER.

DEAR SIR:—I have walked constantly, since the first of August last, on my new leg, with the end support. I find that for firmness in walking and naturalness in feeling, your late patent is certainly a decided improvement.

Respectfully,
D. M. JONES,
Col. U. S. V.

COLUMBUS, OHIO, Feb. 20, 1874.

DR. B. FRANK. PALMER.

DEAR SIR:—I am happy to inform you that I am getting along splendidly on my new leg.

I saw Mr. Addison Palmer, in Zanesville, last week; he wished to know how I got along on the *Safety-Socket*. I told him first-rate, and advised him to get one.

That young man who lost his on the railroad, is going to order one of your limbs.

I am yours, respectfully,
DAVID PROPERT.

ROSEBURG, OREGON, May 8, 1874.

DR. B. F. PALMER.

DEAR SIR:—With pleasure I write you as requested. I got my leg two weeks ago, and I am well satisfied with it. It fits splendidly, and it is so light that I can walk around almost as well as ever. You could not tell there was anything the matter with me now—I feel like a new man. I expected it would be better than the one I got before, but I did not expect it to be so much better. The one I got from ———, is like a chunk of wood, and the one I got from you feels like a natural leg. I think the support on the end of the stump is a great thing. At first I could not bear so much, but I find it does not hurt at all now.

Yours, truly,
PATRICK MCGROGAN.

MAYOR'S OFFICE,
TOLEDO, OHIO, June 20, 1874.

DR. PALMER.

DEAR SIR:—I received my leg on the 17th inst., and to-day I am wearing it without a cane.

I am well pleased with it, and shall do all in my power to get all the applications for you possible.

Yours, truly, JACOB ESSEX.

OFFICE PENNA. RAIL ROAD,
CAMDEN, N. J., March 5, 1874.

DR. PALMER.

DEAR SIR:—It affords me great pleasure to inform you that the leg, which you applied in December last, with the Patent Safety-Socket, is a complete success.

My amputation, above the knee, gave a pointed and sensitive end to the stump, but I experienced no unpleasant feeling while resting my weight firmly in the Safety-Socket; and having read the letter of F. H. Furniss, Esq., concerning the return of the natural feeling of the human limb, to wit: "The muscles begin to feel as if they reached to the foot; the warm blood seems again to descend to the toes, bringing back former sensations"—I find a *true expression of the facts*, and endorse his statement. It is not a year since my amputation, and I am amazed at the great progress I have made in two months use of the new leg.

Very truly yours,

J. ELFRETH WATKINS,

Civil Engineer Penna. R. R.

ATLANTA, GA., April 15, 1874.

DR. PALMER.

DEAR SIR:—My stump was so tender that I thought I could not go on the end, but on trial of the Safety-Socket leg, I found I could put my whole weight on the end with positive comfort. I am surprised at the result.

JOHN J. CALLAGHAN,

No. 101 South Loyd St., Atlanta, Ga.

ST. CLAIR, PENNA., April 14, 1874.

DR. B. F. PALMER.

DEAR SIR:—I am happy to inform you that I received my leg, and am very much pleased with it. I wore it all day Sunday and Monday and did not use a cane. *I walk with perfect ease, and it feels more like the natural leg*, and is much lighter than the old one.

I can go through any dance, and waltz as well as if I had my natural leg—many thanks to you.

Yours, truly,

JOHN McKEONE.

U. S. INDIAN RESERVATION,

NEOH BAY, W. T., June 9, 1874.

DR. B. FRANK. PALMER.

MY DEAR SIR:—I have received my leg in good condition by express, and paid \$150 *in gold*; it gives perfect satisfaction. I am wearing it now, and surprise the Indians very much in the manner in which I use it. When it was received, the

Indians gazed upon it with wonder and amazement. I hope it will do me until the Centennial, when I expect to visit Philadelphia, and get a new one.

Accept my thanks for the prompt manner in which you complied with my request in sending it. With kind regards,

I am, very truly yours,

E. M. GIBSON, U. S. Indian Agent.

YORKVILLE, S. C., January, 30, 1874.

DR. B. F. PALMER.

DEAR SIR:—I handed one of your circulars, explanatory of the improved Safety-Socket, to Mr. W. E. Erwin, of this place, *who, like myself, is incredulous* as to its success; however, he suggested this morning, that we each take a leg with the improvements. Please find funds enclosed; send mine soon, and oblige,

Yours, respectfully,

JAMES F. HART.

OFFICE OF JAMES F. HART, Attorney-at-Law,

YORKVILLE, S. C., April 14, 1874.

DR. B. F. PALMER.

DEAR SIR:—The leg with new Safety-Socket came to hand last Saturday night, and to-day I am wearing it, and attending to my usual business with comfort and ease. The pressure upon the end of the stump—a theory that all unfortunates of our class are skeptical about—is certainly the *most wonderful improvement of the age in the manufacture of artificial legs*, and I am only surprised that inventors had not sooner directed attention to it. This pressure is borne easily and pleasantly. Having less than two inches of stump upon which to distribute the pressure, with the leg formerly worn, you can imagine the relief afforded by a leg that enables me to place the pressure on the end of the stump, with entire comfort. I can stand with my sound leg drawn up and support the whole weight of the body on the artificial limb without discomfort, a thing I could never do before.

While giving you this unsolicited testimonial as to the advantages of your great discovery, and its application to practice, I desire to say that I shall never wear or recommend to others any leg that does not support the weight, as yours does, on the end of the stump.

P. S.—I have withheld this letter for some days, fearing that I might find cause to modify my views, but I have since worn the leg constantly, and am ready to reiterate all heretofore written in its favor.

Yours, truly, JAMES F. HART.

Mr. Erwin will send on soon.

LANCASTER COURT HOUSE, S. C., October 25, 1873.

DR. B. FRANK. PALMER,

DEAR SIR:—Your reply, offering to make a leg for me and Maj. B. R. Clyburn, I showed to Maj. Clyburn, and he told me he would send with me for a leg. I send you one hundred dollars—part payment in advance, which you will credit.

My stump is very tender; the bone being very near the surface. *I doubt whether I can use your Safety-Socket.* I see it can be removed, and if it hurts me I will take it out.

Yours, truly,

JOHN C. WITHERSPOON.

May 7, 1874.

DR. B. FRANK. PALMER.

DEAR SIR:—Maj. Clyburn requests me to send you fifty dollars and measures for a leg, and will pay you the balance on delivery. I told Maj. Hart and Mr. Irwin, of York, of your leg, and when they *saw how well mine worked*, they concluded to get one. Hart, I understand, has got his, and is very much pleased. My leg is all right. I will take pleasure in giving you my testimonial, and am satisfied *your limb will be used generally in this section.*

Very respectfully,

JOHN C. WITHERSPOON,

Attorney-at-Law.

LANCASTER, C. H., S. C., May 4, 1874.

DR. B. F. PALMER.

DEAR SIR:—Having seen one of your artificial legs which is now worn by my friend, J. C. Witherspoon, Esq., and feeling satisfied of its superiority over all others, I enclose to you measures and fifty dollars—will pay balance on delivery.

Please make the leg and send by express.

Yours, respectfully,

B. R. CLYBURN.

UNION, S. C., October 28, 1873.

B. F. PALMER, LL. D.

DEAR SIR:—Yours of the 23d inst. received.—The Safety-Socket, is my main object in trying one of your legs. I did not use the——leg without pain.

Yours, truly,

CHAS. BOLT.

OFFICE OF CLERK OF THE COURT,

UNION, S. C., June 10, 1874.

DR. B. FRANK. PALMER,

DEAR SIR:—The leg you made me is a success; I must acknowledge that my expectations were high when I called on you, but to get a substitute so complete as the one you gave me, I had no idea of receiving, and I cannot refrain from giving you my heartfelt thanks.

Yours, with sincere thanks,

CHARLES BOLT,

Clerk of the Courts.

JACKSONVILLE, ONSLOW Co., N. C., March 24, 1874.

DR. B. FRANK. PALMER.

1609 Chestnut Street, Philadelphia, Penn.

DEAR SIR:—I received the leg you made for me about the first of January, and have been wearing it ever since. I confess that I did not know what the comfort and convenience of an artificial leg were before I commenced using your patent. I have never as yet felt the least inconvenience from it. My friends, the first day I put it on, noticed a very perceptible improvement in my walk. I lost my leg in April, 1864, from gun-shot wound, and have worn out two artificial limbs, but they were no comparison in ease and comfort to the one you made me. Accept my sincere thanks, and I think you are entitled to the gratitude of every one-legged man who uses one of your patent limbs.

Very respectfully and truly, yours,

A. C. HUGGINS,

Clerk Supreme Court.

ANTESIA, MISS., MAY 31, 1874.

DR. B. F. PALMER.

MY DEAR SIR:—I hope you will not consider me ungrate-

ful in delaying so long adding my testimonial to the many thousands that you receive, declaring the efficiency of your perfect artificial limb. It was once glorious for a soldier to lose a limb in defense of his country ; but the invention of a Palmer leg has reduced that patriotism to a secondary consideration. You will remember how completely disgusted I was with the leg the first time I put it on ; I asked you, did you think I would ever learn to walk with a cane, and how astonished I was when you replied that I would walk well *without* a cane. I thought, at that time, I would invest the cost of two legs in advertising it as a Yankee humbug. Now, I feel as if I would send a certificate to every unfortunate like myself, to try an artificial limb—with a caution attached—none but the Palmer limbs are genuine. I walk perfectly on my leg, (a thigh amputation) and frequently ride thirty to forty miles a day without any inconvenience. You can safely guarantee an unfortunate his money back if the leg does not prove entirely satisfactory. I have used the new leg two years, and not had a dime's expenditure on it yet, and the machinery is still perfect.

I cultivate one thousand acres in corn and cotton, and attend to it all myself. In fact, I do not miss my leg being off, so perfect is the artificial one. All I ask of a "doubting Thomas" (having been one myself), is to give the Palmer leg a fair test. I would not be without the leg for any consideration.

You are at liberty to use this as you see proper, for many of the brave soldiers, North and South, are to-day unwilling to believe that Dr. B. F. Palmer can fit them a leg that is almost natural. I will be on to the Centennial celebration, and call to see you in *propria persona*. I am no Congressman, nor the son of a Congressman, but Congress ought to vote you a princely fortune for the patent, so that it would place the leg in reach of every soldier North and South, for we are one nation and one people. It would do more good to harmonize the two sections than all the amnesty proclamations and messages ever issued.

I remain, your faithful friend,

JOE. H. ASKEN,

Co. A. Gen'l. W. B. Forrest's Old Regt.

MOBILE, ALA., June 15, 1874.

TO DOUBTING FRIENDS.

GREETING:—Thinking my *experience* in the use of the two artificial limbs, the old and the new patent, might be of some interest to those in need of a substitute, I make this full statement as coming from a SOUTHERN SOLDIER. In September, 1863, I was wounded in the left leg, (which caused amputation) and shortly after taken as prisoner of war to Washington City, and confined in the OLD CAPITOL PRISON; while there I ordered my limb, (Palmer's Patent) and my measure was taken in that Prison, but I did not receive the leg until after my removal to Point Lookout, which was another prison, situated on the shore of the Chesapeake Bay. The camp was laid off in streets, with deep ditches on each side of about four to five feet in width; our tents were placed on each side of these streets, with the ditch in front, which rendered it impossible for a prisoner to get from his tent to the street without first crossing the ditch, and to cross meant to jump. I remained in that prison a little over five months, after the arrival of my limb, and jumped that ditch not less than *thirty-six hundred times, each and every time landing my full 150 pounds on the artificial leg, and it stood the test without breaking or even being injured.* I do not think a more severe test could be tried practically.

On another occasion a Brigadier Gen'l (who wore one of England's best limbs) and myself, were on the same train together, on our way from Charlotte, N. C., to Hillsboro, in the same state; the road had been cut by raiders between these two points, and our car only carried us to the break in the road. We both got out; he to sit on the track while one of his men *went seventeen miles on foot, for the General's horse* to carry him, while I, with my Palmer limb, footed the distance, and went five miles further to the next station, beating the General by at least twenty-four hours. On this trip I carried a carpet-sack weighing between thirty and forty pounds, and did not use a cane. Since the close of the war I have led a sedentary life, and have not put my limb to any severe test, but I know when the time comes, that it will not fail. I was perfectly contented with the old limb, but am now using one of the Safety-Socket legs, which I find is an immense improvement, and enables me to accomplish

the impossible in the past. To my Southern friends in need of artificial limbs, I would say, that I consider the new Palmer limb the best in the world, *and that it is not necessary to go to the factory to have a limb fitted*, but only to fill out the blanks Dr. Palmer will send you, on application. Believe me, they are all that is necessary, and all that I sent.

Respectfully,

GEO. H. TAYLOR, M. D.

I wish the reader to read again these last letters, and then ask himself, why it was that Mr. Asken, when first trying the leg, was so disposed to denounce it. The reason is known by all our Southern friends who, like him have been the subject of certain mountebanks who, having nothing to do at home, in the North, have, since the war, been South plying their vocation, with less success than the peripatetic cordwainer achieves with his waxed-end, by "whipping-the-cat," with his kit on his back in Yankee-land.

These Southern men have been so abused by the itinerant craftsmen from the North, who misrepresent our reliable manufacturers, that they seem to think we are all a combination of carpet-baggers, seeking, *in every way*, to cheat them.

I will, with pleasure, refer all such applicants to prominent men on my list, in every state, who, like Mr. Asken, and Dr. Taylor, will give them the true information.

STILL LATER LETTERS.

Two most valuable letters have just been received, one from my first patient, (1846); the other from Judge Brookings, (patient of 1858). Mr. Albert D. Taylor's leg is off three inches below the knee, and Judge Brookings has lost both legs about four inches below his knees. It is only about three months since these gentlemen became converts to the new theory. Allusion to Mr. T. will be seen on page 4, Part First, and to Judge B. on page 43, Part First.

This Diary of the day's doings, in which will be seen the *steps* by which men pass from a state of the most positive unbelief, to a condition which causes them to burst forth in exclamations of irrepressible joy, will be found convincing.

No man can so manufacture *unreal* testimony as to give it the force which *real* evidence bears on its face, and no man can *now* bamboozle a dozen Lawyers, Clerks of Courts, Judges, Physicians, Rail Road Presidents, and Southern gentlemen, who have been *once* cheated, so as to obtain from them such letters as they *voluntarily* send when a great service has been rendered, which they were not looking for.

Judge Brookings, being President of a Rail Road, could travel free of expense; hence, he came to Philadelphia from Dakota Territory, and put on the legs. Mr. Taylor had his sent to Iowa, by express.

ATLANTIC, NEAR WINTERSSET, IOWA.

DR. B. F. PALMER.

DEAR SIR:—I sent Mr. P. B. Sprague (see page 37, Part First,) to you for a leg, and in return, when he came home, he advised me to get the Safety-Socket leg, which I had not supposed I could wear—my stump being very tender. I now believe in the Safety-Socket as applied in the leg you sent to me. I have worn your leg almost thirty years, and have always, and on all occasions, *talked* and *walked* Palmer leg. I walk so well that people will not believe I wear a false leg till they *take hold of it*. I now anticipate much more comfort in wearing the Safety-Socket leg, in which I stand with delight.

Truly, your friend, ALBERT D. TAYLOR.

DAKOTA, GRAND TRUNK RAILWAY OFFICE,
YANKTON, DAKOTA TY., July 10, 1874.

MY DEAR SIR:—I have worn a pair of your limbs since 1858. The new pair, with Safety-Socket, I find a great improvement. One of mine was so constructed that the *entire* weight bore on the end of the stump; and, at first, was rather disagreeable, but after wearing a month I find them both comfortable. I now believe the invention of the Safety-Socket the greatest improvement that has been made in artificial limbs. It is the most natural bearing, and easiest for the limbs, either sitting or standing. It is so comfortable and natural that it will be very soon generally adopted.

Yours, truly,

W. W. BROOKINGS, President.

B. FRANK. PALMER, LL. D.

THE NEW PALMER FOOT

FOR

SYME OPERATIONS,
PIROZOFF OPERATIONS,
CHOPART OPERATIONS, &C.



AMPUTATION BY PROF. JAMES SYME, IN THE
ROYAL COLLEGE OF SURGEONS, EDINBURG.

[*The Old and New Palmer Leg Tested.*]

OFFICE OF THE RED STAR LINE, STEAM SHIP COMPANY,
CHICAGO, ILL., July 15, 1874.

DR. B. F. PALMER.

DEAR SIR:—Having worn two of your limbs, I wish to add my testimony in favor of an invention which has resulted so beneficially to me. I suffered amputation of my right foot at the ankle joint, near twenty years ago, while in Scotland, the operation being performed personally by Prof. Syme, then of the Royal College of Surgeons, Edinburg. I wore what is commonly called a peg-boot for nine years, and suffered so much by it, that I despaired of ever having much use of my limb, or being otherwise than a complete cripple all my life. Circumstances, however, caused me to emigrate to this country, where, after having resided two years in Pittsburgh, I learned of the fame of your limbs, and was persuaded by my friends to procure one. I did so, and immediately that I put it on, I walked with perfect comfort, naturalness and ease. My New foot is a capital fit and a complete success. I walked a distance of twelve miles in three trials, besides standing on my feet in the office all day without being tired. I walk on an average eight miles every day and feel no inconvenience.

Your obedient servant,

JAMES H. MILNE, Agent Red Star Line.

LETTERS FROM ENGLAND.

I have now to add most valuable testimony from England, and other countries.

BRIGHTON, ENGLAND, March 23, 1873.

B. F. PALMER, L L. D.

SIR:—Fifty years ago next September, I had my right leg amputated, being then about nine years of age. As soon as I had done growing I had a false leg, and ever since then have worn one, and of course had a great many. About two years ago, when I was wanting a new leg, I met with a second hand one which a lady had worn for many years, but which she, getting fat, had grown out of, and being too small she sent it to a shop for sale, where I saw it. It was an American made leg. I was so struck with it, as being altogether so superior to anything I had ever seen, that I determined to try if I could wear it. With a little padding, &c., I found it would fit me. I have worn it now for two years with such perfect comfort and such entire satisfaction, that I determined to get another like it. As I did not know who was the maker, or where to apply in America, I wrote to my friend, Dr. H. W. Beecher, of Brooklyn, who kindly sent me your papers.

I will fill up your Blank, and shall be glad to hear from you by the next mail, if possible.

Yours, faithfully,

HENRY QUICK,

Pastor of Clifton Road Church.

B. F. PALMER, L L. D.

MY DEAR SIR:—The limb arrived all right; it fits beautifully. I walk with perfect ease. It leaves nothing to be desired. I wish every one that has met with the same loss was so well provided.

I shall write and thank Mr. Beecher for introducing your office.

With many thanks to you for the comfort I enjoy, I am, sir,

Very truly yours,

HENRY QUICK.

June 23, 1873.

There is something more than mere chance about the adventures of this Palmer leg, which was made in 1851 for an English lady, and worn in 1873 by an English clergyman (when the lady had no longer any use for it). The letters of the clergyman do not contain the most singular portion of the leg's history. This leg, it appears, was the first one made and fitted by me in London. The triumph was so complete, and the lady felt so grateful, that, after purchasing two legs at once, (and paying sixty guineas,) she went personally before the great scientists in London (prominent among whom was her husband), and then to Paris, to claim for it the admiration of such eminent surgeons as Sir Benjamin C. Brodie, Sir Wm. Ferguson, M. Velpeau, M. Roux, and their associates. The lady was successful in presenting it, and is referred to in the report of the Société de Chirurgie, as Madame X, to wit:

"A lady aged 47—Amputation at the middle of the limb—Use of artificial limbs since 1836—Successive trials of different models—Ferd. Martin, Mille, Palmer.—Madame X—"

"Here is a second example of the fine action of the Palmer limb. It is furnished us by the lady of one of our brother physicians and friends of London. This case is of the greatest importance, from the fact that this lady had made use, successively, of English and French appliances, and does not hesitate to accord the preference to Palmer's." [See page 59, Part I.]

There is an explanation of the circumstance that caused this limb to be placed on sale, after twenty years' use by the lady, which causes the truth, in the journeying of this Palmer leg, to become "stranger than fiction." For this reason all that the reverend gentleman could learn of the origin of the leg, was, that it was made by an "American." Thinking that the knowledge of the maker could be obtained by writing to his most eminent clerical friend in America, the Rev. Mr. Quick wrote to the Rev. Henry Ward Beecher, who being in no doubt as to the maker of the leg, came immediately to my office—a long distance—obtained from me the proper blanks, sent them to his friend in England, who returned the measures to me, with Baring & Brothers' bill of exchange. Many thanks are due to the Rev. Mr.

Beecher, who has more than once given such evidences of kind personal regard, and appreciation of the professional services rendered to his friends.

This new American leg now worn by the Rev. Henry Quick, has become famous in England, of late, as the one made for the English lady did in 1851.

A prominent gentleman in Liverpool, acting on the advice of eminent English surgeons, wrote thus :

11 DRURY LANE, LIVERPOOL, ENG., Oct. 7th, 1873.

B. F. PALMER, L.L.D.

MY DEAR SIR:—Learning from my friends that you make a much better patent leg than is made in England, I send you measures for a leg for my son, who has for some time worn the best made here. Our friends, Messrs. Brown Brothers, Philadelphia, will hand you one hundred and fifty dollars, gold.

My son is starting to-morrow for a four months' trip round to the West Coast of America for his health, and consequently there is no hurry for the leg.

Yours, Truly,

HENRY JUMP.

In March last, a gentleman walked into my office saying, "I am Mr. Jump, father of the young man for whom the leg was ordered. Feeling a desire to have the leg fitted by you personally, my son decided to visit Philadelphia, and Mrs. Jump and myself wishing to see him put on the new leg, concluded to come and see you, then cross the Rocky Mountains to meet our son, and go through the Yosemite Valley, then return with him to Philadelphia."

A TELEGRAM.

CLARENDON HOTEL, NEW YORK, July 20, 1874.

DR. PALMER,

Philadelphia.

We will be with you to-morrow.

HENRY JUMP.

MEMORANDA.

My English friends, Mr. and Mrs. Jump, have arrived with their fine son. The young man is a good specimen of an athlete, nineteen years of age, over six feet high, with a grand physique, which, I doubt not, was developed in part by the manly sport that cost him a leg. In June, 1868, when about thirteen years old, he received a ball, against the ankle, while at his great game of cricket. For five months he concealed the pain he felt, and walked with but little limping. Then he was obliged to submit to treatment. His surgeons were no less than Drs. Peckastaf and Banks, of Liverpool, and Sir Wm. Ferguson and Sir James Paget, of London. He also had the advice of the great Prof. Syme, of Edinburgh. But they could not all save his foot. Amputation was performed about two inches above the knee, and a most excellent stump remains. Mr. J. has walked on an English leg till now. On the first trial of the new Palmer leg, this day, he placed his whole weight (about two hundred pounds) on the end of his stump, and, smiling, said the pressure was pleasant. It is a grand success, and will be seen by the great English surgeons shortly, who sent their patient so far to obtain the Safety-Socket leg, and to whom I submit my work with much pleasure.

Mr. Jump put his leg on in Philadelphia, July 27th, and walked without a cane to the ship in which he sailed.

NEW PALMER LEG IN ENGLAND.

Reference is respectfully made to Sir William Ferguson, and Sir James Paget, London, and to the eminent Surgeons Peckastaf and Banks, Liverpool, who have sent to me their patients, also, to

HENRY JUMP, Esq., 11 DRURY LANE, LIVERPOOL,

AND THE

REVEREND HENRY QUICK, BRIGHTON, NEAR LONDON.

A GENTLEMAN OF HALIFAX, N. S.

This gentleman recently sailed from Halifax to London, to obtain a leg. (His name will be given if asked for.)

Having gone so far, he sought the advice of the Queen's Surgeon, Sir Wm. Ferguson, who advised him to return by the same steamer, to America, and get a Palmer Leg. He did so, being (as he assured me after doubling the Atlantic, getting the most authoritative advice in London, and sailing to my office in Boston) certain that he had found, what he started out for,—“the best leg in the world.” He was well satisfied with his round trip, and his final success in finding the leg;—though since then, when wanting similar professional aid, he has not sailed out in the same direction, finding a shorter route to reach Boston, from Halifax, than *via* London. And yet it is not hard to imagine that this man never regretted his trip to London, because the *advice* he obtained from the great surgeon of that great city, settled his mind, and he has not since been in doubt, as some are who do not go so far, and do not learn so much to their advantage.

A gentleman from Scotland, recently came to Philadelphia, to examine the new invention, and expressed great pleasure. He took the papers necessary out by a late steamer, to send measures for a leg, for his son, to be sent to Scotland. This case is in hand.

Another gentleman recently came to Philadelphia, on crutches, from Chili, S. A., to obtain the leg to be used by him in traversing the Cordillera Mountains, as railroad conductor. In fact, it may be said that there is again an active demand for the Palmer leg throughout the civilized world, and that it is most sought where the arts of refinement are most perfected, and by men who judge of the evidences before them intelligently, after crossing oceans or continents, in some instances, to examine it.

It is of some importance to show that the English gentleman sails to America, from London, and that the French Judge, sitting in Ermine, sends from Paris to Philadelphia for his Artificial Legs; especially as it is seen that foreign gentlemen are recommended to do so by the best judges of such an invention in the great transatlantic cities.

NEW PALMER LEG IN SPAIN.

(SENT TO GENERAL PALOMINO.)

Sig. Palomino, the Spanish Consul in Philadelphia, has recently sent the Palmer leg to his brother, a distinguished officer at the Court of Madrid. Sig. Palomino has commenced negotiation for the Palmer leg on behalf of his government, on account of the success of this leg.

NEW PALMER LEG IN CUBA.

(LETTER OF DON AURELIO ALMEIDA.)

MATANZAS, CUBA, Feb. 5, 1874.

DR. PALMER.

DEAR SIR:—I have received the second artificial leg (Safety-Socket), which is superior to the first one, and gives a great deal more pleasure. My agent will have handed you three hundred dollars (gold) for the two beautiful limbs.

I am, dear sir, with respect,

DON AURELIO ALMEIDA.

NEW PALMER LEG IN IRELAND.

(LEG SENT IN JUNE LAST, TO MR. LAFFERTY, DUBLIN.)

An Irish gentleman has handed me one hundred and fifty dollars, and sent a leg to his brother in Ireland. [A grand success.]

NEW PALMER LEG IN CANADA.

(LEG SENT IN MAY LAST.)

Wm. Reynolds, Esq., Treasurer of Ontario, New Dominion, forwarded one hundred and fifty dollars, and requested a leg to be sent to him. [See page 74—triumphant success.]

NEW PALMER LEG IN SCOTLAND.

(A PATIENT OF PROF. SYME.)

J. H. Milne, Esq., temporarily in Chicago, as Agent of the "Red Star Line;" a patient of the late illustrious James Syme, author of the "Syme's Operation," has just put on the new Palmer foot for this operation, as done by the great surgeon himself, in Edinburgh.

[See his letter, page 84.]

NEW PALMER LEG IN N. P.

The British Counsel in Nassau, has forwarded an order, with one hundred and fifty dollars, and the new leg has been sent to him. He is much pleased.

NEW PALMER LEG IN S. AMERICA.

Dr. Ver Meulen, Surgeon U. S. N., Callao, Peru, on U. S. Frigate "Onward," has sent remittance, one hundred and fifty dollars, with order for the leg. [Success.]

NEW PALMER LEG IN MEXICO.

General Bustamente has ordered the new leg, and forwarded one hundred and fifty dollars. [Perfect success.]

NEW PALMER LEG IN NEW ZEALAND.

Surgeon Day, in Her Majesty's service, has received the leg in New Zealand, and was pleased to send an honorarium, after finding the leg satisfactory, beyond his hopes.

NEW PALMER LEG IN FRANCE.

Two Safety-Socket legs have been recently sent to France upon receipt of three hundred dollars from the Honorable Judge Choiselat—see page 44. [A great triumph.]

NEW PALMER LEG IN PRUSSIA.

The Prussian Government, acting by the advice of the renowned Virchow, has purchased the Palmer Models, and sent, as an honorarium, one thousand dollars Gold.

NEW PALMER LEG IN THE U. S.

Hundreds of the new legs have been sent to order, some to all parts of the Union. Reference will be made to persons who have thus received them in all the States, from Maine to California, and from Minnesota to Texas.

We now see new and numerous evidences of the esteem in which the Palmer leg is held, at home and abroad, and notice what pains intelligent men take to secure it. The

cases published are only a portion of those recently treated ; others are now going into print.

PART THIRD of my book will go on with the work, and I intend to continue it till I can point every doubting man to his *neighbor*, who wears the leg. I think that a book about the size of Webster's Pictorial Dictionary, Unabridged, will begin to carry conviction to the minds of unbelieving men, who now, on painful legs, remind us of the *ungrammatical* man who sang out, when in the river, "I *will* be drowned—nobody *shall* save me."

The gentlemen who have given me the numerous letters for publication, and permission to refer to them, are, many of them, distinguished lawyers, clergymen, physicians, and officers of high rank. These men did not ask me to construct the limbs until they had made payment in advance. I mention these facts for the information of those who, being at a distance, wish limbs *sent* to them. The demand is now extensive, and only a limited number can be sent out monthly, as the skill required to make these limbs thus to order, so that they shall fit, and please the applicants, is very great, and is possessed only by the most limited number of mechanicians, who work under my personal observation, and receive the measures and profiles arranged by my own hands, to insure success. Persons residing at a distance can, in this way save much expense, and need not visit the manufactory.

As I almost daily receive remittances from a distance, I should do those who thus repose such confidence a wrong, if I should first proceed with limbs for those who do *not* comply with my reasonable rule. My house has been known for twenty-eight years, and my rule to make limbs satisfactory to my patients is always acted upon. I cannot afford to allow any man to have cause to complain. In all cases when limbs are sent, I will, with much pleasure, reconstruct them free of charge, if not found fully satisfactory on first trial ; and after trials persons can *send* the legs or *come*. It will be seen, by letters herein published, that entire success in pleasing my patients results from the practice of sending limbs to all parts of the world, and that I have honorable references throughout the hemispheres.

A WEDGE OF TRUTH STRUCK.

I have been brought to acknowledge the new theory, by witnessing and feeling the almost mystical transformation of mutilated limbs, and my argument shall be the inexorable logic of sturdy *steps*, which all may witness, and the mutilated shall feel, in a return to the true stand-point of action and argument. I will ask for the tenderest stump (when healed) than can be produced, and stake my reputation on success in such a case. Who will present it?

I have before presented extracts from important reports, and from the great works on surgery, to show the *steps* by which the present condition of the art has been reached, believing the record will aid the reader in forming a just estimate of the practical experiments formerly and recently made, by which, at last, an unexampled advance is well established. The mutilated, numbering about one hundred thousand in America, cannot afford to allow a season to pass as former centuries passed, without gaining the true support, which will add so much to their comfort; nor can they afford to allow a matter which so much concerns *them* to first pass the ordeal of organized wisdom, in the great centres of scientific knowledge. The masses cannot afford to allow persons who have less need of it to monopolize it. Deliberative, disinterested and critical scientific bodies will act in this matter, but they are so slow in disclosing new truths, that the children often reap benefits that belong to the fathers. Will you, mutilated readers, pause in doubt and pain, or will you act and secure the comfort you seek? A "wedge" of truth has now been struck. I intend to follow up the blows, and drive it to the head, if it split all ancient and modern theories in the art.

Legs and Sockets will be fitted in the future the same as in the past, for all who desire such, and in all cases the Patent Safety-Socket will be so made and inserted that a part or the whole of the weight can be sustained, just as it has hitherto been done; and the Socket can be readily put in, or taken out by the wearer, at his pleasure, with no damage to the leg, which without it will be the same as it has been in the past, only much improved in many parts of the mechanism, and made lighter.



PRINCIPAL OFFICE

OF THE

PALMER LIMBS,

No. 1609 Chestnut St.,

PHILADELPHIA, U. S.

—:O:—

[A RETREAT, quiet as the Home.]

This well-planned and commodious edifice was erected and equipped for the work, at an expense approaching one hundred thousand dollars, with facilities for one hundred mechanics. A large stock and expensive machinery are necessary, and always on hand. The materials, if not well prepared long in advance would change by shrinkage.

With the new patent, which in its operation now surpasses all former hopes, I am able to produce such limbs for all my patients as could not before have been made by any possibility. Those who apply soon will find every possible advantage; but, as the orders for the new patent are increasing in my hands, I cannot say that many weeks will elapse before the pressure will again demand a distribution of my time among so many, that each one cannot then have the same attention as now. The best inducements are offered to those who order limbs without delay.

RETROSPECTION.

Presuming that the reader will be pleased to notice some of the Inventor's steps on the original Palmer leg, I will present an account of an ascent of Mount Lafayette, in the year 1859, by Rev. T. Starr King, William H. Richardson, Esq., Right Reverend Bishop Haven, Dr. B. Frank Palmer, and others; preliminary to a general REVIEW in PART THIRD.

"Mount Lafayette is ascended by a bridle-path. It is next in height to Mt. Washington, and higher than the loftiest mountain in Scotland. It does not require so long a ride on horseback to reach the peak of Lafayette as to scale Mount Washington, but the average ascent is much steeper. One unacquainted with the mountain paths, and the trustworthy competence of the ponies, whose hoofs get used to striking fire from the primeval granite of the upper stairways, would imagine on the first ascent of the peak, that there was great danger in the expedition. On one side tremendous gorges sweep, and on the other the most lovely of level landscapes is displayed.

When we made our last ascent of the mountain, a friend was of the party whom accident had robbed of one of the natural supports which are impartially supplied to the human race. His genius, however, has supplied the deficiency not only in his own case but for a multitude of others, whose gratitude is a noble part of his reward, by a limb almost as good for walking as nature furnishes, and relieved from numberless inconveniences and ills which we must take with the more supple organism of flesh and blood. He mounted the horse at the Profile House, and did not dismount until he could put Dr. Palmer's artificial leg, in company with the real limb, which nature had given him, on the rocky apex of Mt. Lafayette. We could add graceful testimony to the attractions of Franconia, as well as to the versatility of our companion, if we could print the poem which he wrote on the excursion, that falls under our notice as these pages are passing through the press."* T. S. K.

*[An account of the ascent, by Rev. T. S. King. See his Book, entitled "The White Hills their Legends, Landscapes and Poetry," published in 1859—page 130.]



ASCENDING MOUNT WASHINGTON IN A STORM.

Dr. B. F. Palmer, Rev. T. Starr King, and Wm. H. Richardson, Esq., ascended Mt. Washington, in a snow-storm, October, 1860. This ascent, on horseback, was made before the carriage-road or railroad was constructed, and the writer (alone on horse) approached the "Tip-Top-House" from the Alpine House, without dismounting on the way. Those who have scaled the summit may judge of the horsemanship required to face a storm of snow, so furious as to cause a party descending to warn us of peril and suggest a retreat.

My genial and brilliant friends—my oracle and guide, led up the rugged way by which we pierced the clouds and rose above the storm, in such companionship as made the echoing glens extend a vocal welcome. "As birds of social feather, helping each his fellow's flight, we soared into the skies"—to the sun-crowned summit! Alas! the loved companions, the chosen friends, the charmers in life's rugged road, are gone—*both* gone from all the haunts in the pathway of Time, to be seen no more this side of the Eternal Hills. There, may we again find happy reunion on some bright morning.

B. F. P.

PART THIRD.

A REVIEW OF TWENTY-EIGHT YEARS.

It has been said that there is no better way of judging of the future, than by the past. Concerning the advancement in my art, after acknowledging the failure to reach complete success hitherto (as no man has been operating on the correct plan of artificial locomotion), I am not reluctant to show how far in the right direction my former labors extended. By the record of what has been done in twenty-eight years I will stand, while asking attention to a propitious step now taken forward. From this record I will present a choice selection of statements, and articles, published from the year 1846 to 1873; also, I will present the honored names of many eminent surgeons, in America and Europe, among those who first heralded my original invention, all of whom, now living, are still my patrons. The articles and names now republished will not comprise more than one in one hundred of the whole number on file, as much new matter, of still higher value, remains to be added; and, having reached page ninety-seven without getting on far with my book, I am reminded that there must be somewhere a limit to the pages; hence, there can be only a few selections from many thousands, equally valuable, which I should be glad to present if space allowed.

These selections will, however, establish the following facts: First. This invention was the first Patent leg ever made in the country, and the best false leg known was set aside, by the medical profession generally, and their mutilated subjects recommended to adopt the Palmer leg. Second. The "place of election," in amputating legs, was changed by the adoption of this leg, and long stumps were saved instead of short ones, when practicable, at my suggestion first made in 1846 in this country, and in England and France in 1851. Third. The Palmer leg, as made by myself, or by others, who have attempted to imitate it, has been used by nearly all who have purchased patent

legs for more than a quarter of a century, and at the end of this time is more sought for than it was at the beginning. Fourth. Those few persons who have been induced to try other patents, have, after trial, come back and again given preference to the Palmer leg. The old invention has been so universally appropriated by other makers, that the uninformed patient, in hunting about, finds it so displayed by others, before he finds me in some cases, as to cause him to suspect me of being the copyist, because he never sees my models in a show-window (where I do not put them), and no person sees my patients on bare legs, walking about the shambles with their pantaloons rolled up, trying to secure a customer—for a consideration. A lady from Illinois, who is just now having a limb fitted, went all about the streets, passing my house in pursuit of it. She found several show-windows, (with a poor show for her, as she thought) and finally reached my quiet office, and was willing to pay a higher price than was asked elsewhere.

A word about showing models and signs on the street. The true artist does not trust to the display of his *signs*, and a lady of sensibility does not wish to have her steps on the new foot criticised, when she first goes in or out of the studio, by inquisitive gazers about show-windows (that display such things as are made elsewhere). The practitioner who has something to do, cannot afford to be constantly molested by persons who will call where such things are displayed, out of mere curiosity, while he is always happy to wait upon those who have a laudable object in calling. My *work* is my sign, and it may be seen in every part of the world; my references are all peoples of all lands. I do not deem it important to refer to an individual, but (because of a custom that might well be dispensed with), I make respectful mention of many honorable persons, by permission, who have for many years known my work.

I have not asked a single surgeon for a letter to publish concerning the *New Patent*. All professional men concur, with an acclamation of approval, as soon as they see the leg, and it would be invidious to single out a few, to mention now, as I did when coming before the public in 1846. All that I had then done was on trial, and not, as now, the tried and unquestionable production.

THE ARMY ON PALMER LIMBS.

If the reader should, with me, re-enter the long lines of the great army of "broken soldiers" on my muster roll, and attempt to notice the evolutions of those who have fought in the great battle of life, on patent legs, we should first notice one who gave his own leg in the early life-battle, and mounted the original Palmer leg, in March, 1846, at twenty-two years of age, in time of the Mexican War; then, glancing down the column, formed from 1846 to 1874, we should again behold him, in middle-life, mounting the new leg, and feeling as elastic as when he first started off at the head of the Palmer Legion, more than a quarter of a century ago.

We should, in our review, particularly notice the closing ranks of the first company in 1846,—less than one hundred—all joyous in spirit and active in limb, moving on with alacrity, battling for the new invention—we should next see the rapidly-closing ranks, from 1847 to 1861, forming solid regiments, then—a sudden pause, when the great Civil War, in a day, with another army, divided our lines as it did our Union, and suspended the work of peace in half the land, while in the other half, the drum-roll called to field-duty those who had before been honorably retired from service, after losing human legs in former battles—then witness the loss, in the Great War, of twenty thousand human limbs; and, finally, behold the soldiers again springing forward to active duty, on Palmer limbs, until the end of the strife.

I will not here, and now, allude to individuals who have won more than national renown while using the limbs, in War and in Peace, but elsewhere the honorable names of many will appear on my roll. Our army of heroes, and heroines, spans three decades of time, and two hemispheres. It includes the American, English, French, German, Spanish, Russian, Turkish, African, Indian—people of all nations, ages and conditions. The benefit is not limited to race or sex. It is enjoyed by persons *eighty* years of age, and children from *two* years old to the years of adolescence. Persons known and unknown, in the walks of life, may be found in the promiscuous army, and seen on active duty—many, many

thousands—outnumbering the entire American army of General Winfield Scott, which victoriously entered the City of Mexico, in 1846, and raised the Stars and Stripes over the Halls of the Montezumas. This Great General furnished, by battle, my first war-patient, and with his successful army might have been seen the first advance *picket* on the original Palmer leg, then first patronized by President Polk, in War. That soldier returned with his Palmer leg, and it may be still remembered that a comrade brought with him General Santa Anna's leg, which was in my possession after the war.

After reviewing the great army, marching and counter-marching in memory's field, I find the ranks crowded with gallant men, and lovely women, who, by good deeds, have made fair "foot-prints on the sands of time;"—whose achievements have been grand and glorious,—not only successful in their steps on the Palmer foot, but also in all of their life-steps. I know not whom to mention *secondly*, in the epistolary review. In this exigency I have concluded to pass the whole formidable column with respectful, grateful salutation—thanking the men, women and youth, who gave me early and cordial support, as well as those of a later date for whom I make more room in these pages—not by choice, but because the march of mind demands something *new* and startling. The man of the period is not satisfied with the best thing on earth unless it has been improved within the last year. The Palmer leg has been thus improved triumphantly, and is ready for the *coming* man.

In the present condition of the art, how unlike are the materials at hand—masses on masses—when compared with those found in 1846. Then the first certificate of a gentleman, and a lady, wearing the Palmer leg, was sought and published, to establish the fact that the leg would *go*, and every paper that could fairly be had was presented. Now, I am overwhelmed with thousands on thousands of letters, reports and testimonials, from all parts of the world,—each one of which might reasonably establish a belief—and the question is not how shall I obtain testimonials, but how shall I withhold a mass of valuable evidence before me, in making up the book, which might become larger than any public document ever published.

Leaving, but not deserting, the old army, I must make a detour in the march—a grand *epistolary raid*. When General Sherman, leaving Washington, had started on his great Southern raid, President Lincoln was asked where Sherman would “come out.” The reply was: I only know where Sherman “went in.” So I only know that I am well *in* the work, but cannot say where, when, or with whom I shall come out. But, like Sherman’s, my army will emerge.

In thus starting out, a second time, with a new invention, it is interesting to notice the effect of the former one on the popular mind, as well as to notice its value to the mutilated army. What was thought to be “impossible,” in 1846, is thought to be a very simple operation in 1874. The original invention raised the standard of judgment so high, that a limb which once seemed complete, now, being the common standard of merit and comparison, has become so much a thing of accorded superiority, as not longer to seem entitled to special consideration. Like any good thing, after long use, its merits are less noticed than its faults. A man will now walk twenty-five miles in a day, on a Palmer leg, without thinking it of any great use to him, and if at night he is tired and sore, he will only murmur because he could not comfortably have gone twice as far, and he may censure the leg-maker for his inability to add the other twenty-five miles. This is no fancy sketch, as hundreds will testify. Thus men and legs move onward.

I now come forward with strong sentences, but without skill in the use of language sufficient to match, and adequately herald a triumph in art which is so grand as to transcend belief, and bring in question the best successes of the past. In the past we have, as builders, formed the pillars of our tabernacle well, shaping them with scrupulous skill, but we have not sought the right foundation to set them on; hence our building has not been equal to the stress of the elements—it totters. Ignorant of the most vital knowledge, and most essential, art has not been fully subservient to nature. Man sought another—not the Divine plan, hence the success was long incomplete. We must return to the great work, on the right plan, and reset the tottering pillars of our tabernacle upon the true foundation. Pride of opinion, and the authority of long usage,

must yield to the advancing steps of Science and Art, now come to the aid of wounded Humanity. Compensatory Art is no longer in conflict with Nature. If, in his peculiar work, each artificer shall at last, by dint of life-long experiments, succeed in learning "how little can be known" of the great aggregate of wisdom, he will thus establish one fact, and gain one true step towards the fountain of knowledge; but he will not at once convince his fellows, that (if they will keep on learning) they too will arrive finally at the same valuable truth. The great Ambrose Paré saw the old masters in the Surgical art, plunge the end of the stump into a pot of boiling pitch after amputation. They told him that was the true way to stop bleeding. Paré thought it strange that so barbarous a practice could be the proper method, in humane hands. He took a simple thread,—tied the arteries—overturned the theories of his predecessors, and was by his associates denounced for it—even by his great rival, M. Pettit, who still stuck to the pitch. Then the noble Paré, in the fullness of his great heart, with his own hand recorded—"I am ashamed of my masters."

It would seem as if there ought to be some way to convince men of a truth so simple, so important, and so easily understood as the one I am laboring to establish. But now, as in all former time, it is useless to think of getting men to recognize any new and valuable truth short of a struggle with their prejudices. I purpose making such a record as shall leave the unbelievers no satisfactory standpoint for argument or locomotion.

GREAT AMERICAN SURGEONS.

[Three letters are here presented, as representative testimonials in the early days of the Palmer leg, received from the great surgeons of Boston, New York and Philadelphia. The first letters from Drs. Townsend, Mott and Mutter, date back to 1846.]

BOSTON, June 12, 1849.

The undersigned having witnessed the successful use of the artificial limbs manufactured by Mr. B. F. Palmer, very gladly recommend them to persons who have suffered the loss of a lower extremity. The very ingenious mechanism

which is applied in this invention, produces an imitation of the shape and motion of a living member, much more successful than would seem possible. We recommend them with pleasure and confidence to those who may need such assistance.

JOHN C. WARREN, M. D.
GEO. HAYWARD, M. D.
JACOB BIGELOW, M. D.
S. D. TOWNSEND, M. D.
J. MASON WARREN, M. D.
D. H. STORER, M. D.

Surgeons and Physicians to Massachusetts General Hospital.

PHILADELPHIA, March 10, 1856.

B. FRANK. PALMER, ESQ., ETC.

MY DEAR SIR:—I am really much gratified to find that your ingenuity and perseverance have at length accomplished what the profession has so long waited for in vain,—*a useful Artificial Hand and Arm.* The models you showed me are worthy companions of your *unequaled Artificial Legs.* After many years' observation of the latter, I am compelled to repeat, what I have already expressed in writing, that neither in Europe nor America is there an instrument of the kind, in my judgment at least, worthy of comparison with them.

Trusting that you will continue your efforts to relieve your fellow-creatures,

I remain very sincerely yours,

THOMAS D. MUTTER, M. D., LL.D.

Professor of Surgery, Jefferson Medical College, Philadelphia.

NEW YORK, Jan. 4, 1851.

I have examined carefully the artificial leg invented by Mr. B. Frank. Palmer, of this country. Its construction is simple, and its execution is beautiful; and, what is most important, those who have the misfortune to require a substitute for the natural limb, and the good fortune to possess it, all concur in bearing practical testimony to its superiority in comfort and utility.

VALENTINE MOTT, M. D., LL.D.,

Professor of Surgery in the New York University.

Indorsed by,

WILLARD PARKER, M. D., Professor of Surgery, New York City.
 J. M. CARNOCHAN, M. D., Professor of Surgery, New York.
 B. F. BACHE, M. D., U. S. Naval Hospital, New York.
 FRANK H. HAMILTON, M. D., Professor Surgery, University of Buffalo.
 WM. H. VAN BUREN, M. D., Prof. of Anatomy, University of New York.
 JAMES R. WOOD, M. D., Surgeon to Bellevue Hospital.
 STEPHEN SMITH, M. D., Surgeon to Bellevue Hospital.
 T. M. MARKOE, M. D., Surgeon to New York Hospital.
 J. H. ARMSBY, M. D., Professor of Anatomy, Albany Medical College.
 CHARLES D. SMITH, M. D., Surgeon to Bellevue Hospital, New York.
 DANIEL AYRES, M. D., Surgeon of Long Island College Hospital, Brooklyn.
 LOUIS BAUER, M. D., Surgeon of Long Island College, Brooklyn.
 BENJAMIN S. SHAW, M. D., Physician and Superintendent, Mass. Gen. Hospital.
 HENRY J. BIGELOW, Professor of Surgery, Harvard University.

ALDEN MARCH, M. D., Prof. of Surgery, Albany Medical College.
 W. GIBSON, M. D., Professor of Surgery University of Pennsylvania.
 JOSEPH PANCOAST, M. D., Professor of Anatomy, Jefferson Medical College, Phila.
 B. HOWARD RAND, M. D., Prof. Jefferson Med. College, Phila.
 CHARLES A. POPE, M. D., St. Louis University.
 S. D. GROSS, M. D., Louisville University, (now Philadelphia.)
 J. W. HAMILTON, Prof. Surg. in Starling Medical College, Columbus, Ohio.
 J. KNIGHT, M. D., Prof. of Surgery, Medical Institute, Yale College.
 P. A. JEWETT, M. D., Phys. & Surg. Gen. Hospital Soc., New Haven.
 R. L. HOWARD, M. D., Professor of Surgery, Columbus, Ohio.
 N. R. SMITH, M. D., Prof. of Surgery, Baltimore, Md.
 SAMUEL W. THAYER, JR., Professor of Anatomy, University of Vermont.
 GEORGE C. BLACKMAN, M. D., Professor of Surgery, Med. College of Ohio.
 THOMAS HARRIS, M. D., Chief of the Bureau of Medicine and Surgery.

Prof. OLIVER WENDELL HOLMES, Harvard University.

In addition to the foregoing—my patrons of long time ago—I will now mention others, some of whom have more recently risen to the highest positions by virtue of great learning and skill. As they have long known the merits of my inventions, and are now among the most active and efficient surgeons, I find pleasure in adding their names to the honored list which they adorn:

Prof. D. HAYES AGNEW, University of Penn., Phila.

“ F. G. SMITH, “ “ “ “
 “ W. H. PANCOAST, Jefferson Medical College, Phila.
 “ S. WEIR MITCHELL, “ “ “ “
 “ W. H. MUSSEY, Cincinnati, Ohio.
 “ E. B. STEVENS, Syracuse, N. Y.

Dr. NORTON FOLSOM, Physician and Surgeon, Mass. General Hospital, Boston.

These are only a few of the eminent surgeons who now patronize my houses, and I venture to assume that in every town of considerable size, a good physician can be found by all persons in want of limbs, who will, from a personal

knowledge, recommend the Palmer limb and aid in taking measures. I am under obligations to many surgeons, in all parts of the country, for such kind and valuable service. Other names will be added in a second edition.

SURGEON GENERAL'S BUREAU.

As the Surgeon General's Bureau has furnished many thousands of cases (officers and soldiers), reference is respectfully made to GENERAL JOSEPH K. BARNES, SURGEON GENERAL, U. S. A., also to ASSISTANT SURGEON GENERAL C. H. CRANE, and to SURGEON J. S. BILLINGS, U. S. A., of the Surgeon General's Staff, Washington, D. C. The new Palmer leg is *in use* in the Surgeon General's office.

U. S. PATENT OFFICE.

For valuable information concerning the NEW PATENT, I refer to the Hon. M. D. LEGGETT, Commissioner of Patents, in whose Bureau are several patrons of the invention; also to Dr. CHAS. F. STANSBURY, Solicitor of Patents, who took this patent (and several others for limbs), and is familiar with the whole subject. Dr. Stansbury has been for many years connected with the U. S. Patent Office, and stands first in the profession, as a Solicitor of Patents in Washington, D. C.

EARLY REPORTS AND HONORARY AWARDS.

AMERICAN INSTITUTE, NEW YORK, 1846.

PALMER'S PATENT LEG, *in its appearance and in its movements, so accurately resembles the natural limb as to require a careful examination before it can be decided to be anything else but the limb provided by nature.* AWARD, A SILVER MEDAL.

EXHIBITION 1850.

PALMER'S ARTIFICIAL LEG is superior to any other ever constructed, and merits, for science and humanity, the highest testimonial of the Institute. GOLD MEDAL.

D. M. REESE, M.D., LL.D.,	Prof. H. G. COX, M.D.,
Prof. J. M. CARNOCHAN, M.D.,	S. RUSSELL CHILDS, M. D.,
<i>Judges.</i>	

EXHIBITION, BOSTON, 1847.

This invention fulfills the various requisites of a substitute for the lower limb as completely as any artificial machinery ever can be expected to do. *In imitating the various movements of the knee, ankle and foot, and the apparent reliability and permanence, we do not see any failure to fulfill the highest possible requisites.* For MR. PALMER'S successful improvement, SILVER MEDAL.

REPORT—1853.

This Leg is *without an important rival* in this and foreign countries.

We recommend a GOLD MEDAL.

HENRY J. BIGELOW, M.D.,

LUTHER V. BELL, M.D.,

HENRY G. CLARK, M.D.,

GEORGE BARTLETT, M.D.,

WINSLOW LEWIS, M.D.,

Judges.

THE FRANKLIN INSTITUTE.

HALL OF THE FRANKLIN INSTITUTE, PHILA., Jan. 11, 1849.

THE COMMITTEE ON SCIENCE AND THE ARTS, to whom was referred, for examination, an artificial Leg, invented by B. FRANKLIN PALMER, report: * * * *

That the ARTIFICIAL LEG of MR. PALMER is SUPERIOR TO ANY THAT HAS YET COME UNDER THEIR NOTICE. It is light, strong, beautifully shaped, apparently very durable, self-acting in a greater degree than anything they have ever met with, easy and natural in its motion, and possesses apparently all the qualities desirable or attainable in such an invention.

The Committee would recommend the award to the inventor of "SCOTT'S LEGACY MEDAL AND PREMIUM;" also, the FIRST PREMIUM, for his model exhibited in the late Exhibition.

WILLIAM HAMILTON,

B. HOWARD RAND, M.D.,

Actuary.

Chairman Committee.

WORLD'S GREAT EXHIBITION, NEW YORK, 1853.

AWARD TO PALMER, FOR THE BEST ARTIFICIAL LEG—MEDAL.

PROF. J. RENWICK, Chairman,

DR. GALLARDET, Paris,

" W. PARKER, New York,

" PARKMAN, Boston,

" J. M. CARNOCHAN, "

" LUDLOW, New York.

" A. CLARK, "

Judges.

GREAT EUROPEAN SURGEONS AND SCIENTISTS.

INTERNATIONAL EXHIBITION, LONDON.

The Jury have the honor of submitting to Her Majesty's Commissioners the following Report:

In the mechanical compensation of lost parts (of the human body,) great success has been obtained; and among the contrivances for supplying the loss of a lower limb, the admirable mechanism of Mr. B. Frank. Palmer's Artificial Leg (United States, No. 39, p. 1435,) deserves particular notice. This Artificial Leg combines lightness and a successful imitation of the motions of the joints.

[Prize Medal.]

The Surgeons of Europe indorsed this report, as follows:

LETTER OF THE GREAT ARMY SURGEON,
G. J. GUTHRIE,

Ex-President of the Royal College of Surgeons, London.

BERKLEY STREET, BERKLEY SQUARE, LONDON,
September 30, 1851.

B. FRANK. PALMER, Esq.

SIR: I have no hesitation in stating that I consider your Patent Artificial Leg to be the best invention I have yet seen; the most useful and the least distinguishable from the natural limb.

I am, sir, your very obedient servant,

G. J. GUTHRIE.

Indorsed by—

Sir BENJAMIN C. BRODIE, Bart.
Prof. FERGUSSON, Surg. to the Queen.
WM. LAWRENCE, F.R.S., Pres. Roy. Col.
Surg., and Surg. to St. Barth. Hosp.
EDWARD STANLEY, Esq., Surgeon to St.
Bartholomew's Hospital.
Gen. CAMERON, Surgeon to the Marquis
of Anglesey.
Dr. FORBES, London Hospital.
SAMUEL SOLLY, Esq.
J. HILTON, Esq.
J. B. CURLING, Esq., Surgeon to the Lon-
don Hospital.

B. B. COOPER, Esq., Surg. to St. George's
Hospital.
F. SKEY, Esq., Dem. of Anat., St. Barth-
olomew's Hospital.
CÆSAR HAWKINS, Esq.
JOSEPH H. GREEN, Esq., F.R.S.
THOS. WAKLEY, Esq., Ed. *Lancet*.
Sir DAVID BBEWSTER
Mr. LUKE, London Hospital.
I. W. TURNER, F.R.S.E.
Dr. J. M. ARNOTT.
Mr. SHAW, Surgeon to Middlesex Hos-
pital.

THE LONDON TIMES, Sept. 19, 1851.

We have to introduce to the notice of the public another triumph of American ingenuity included in that department of the Great Exhibition. The Marquis of Anglesey will hear with a feeling of satisfaction, that if our cousins beat us in yacht-building, they are equally pre-eminent in the manufacture of artificial legs. In the latter branch of industry their superiority will not be grudged, and they really owe society some act of reparation for having introduced among us Colt's Revolvers. The artificial leg patented by Dr. Palmer, is, in its way, a most admirable, ingenious, and philanthropic contrivance, and its invention is so remarkably characteristic of the country from whence it comes, that we cannot resist the temptation of inviting attention to it. The patentee in some way or other lost his leg, and having tried the best substitutes hitherto devised for such a case, like a true American, he set himself to think whether he could not improve upon them. His study of the subject was crowned with the most striking success, and he exemplifies that success in his own person by walking about almost without any perceptible lameness and with apparent ease and comfort which is truly surprising. He publishes annually, at Philadelphia, a JOURNAL which is entitled *Palmer's Artificial Leg Reporter, and Surgical Adjuvant*. This periodical accompanied a specimen of the leg to the exhibition, and the 1st chapter of vol. 3., No. 1, we find commenced by this heading, "Fugitive thoughts on amputation." From another chapter, entitled "Synopsis of the invention," we gather that it is distinguished by its perfect combination of lightness with strength, and by the extraordinary fidelity with which it imitates nature. Having closely examined it, we can testify to its merits on all the leading points specified, nor have we any reason to doubt that the enameled surface of this leg, as stated, "is rivaled only by the mechanism of nature, and that a lady may wear silk hose and slippers without betraying the loss she has sustained." Dr. Palmer has received extensive orders for his patent in this country, and the public may soon expect to see timber-toed veterans no more stumping about Greenwich. The AMERICAN ARTIFICIAL LEG cannot fail to be regarded as a great boon to suffering humanity.

LETTER FROM PROF. SYME.

(Author of Syme's Operation.)

ROYAL COLLEGE OF SURGEONS, EDINBURGH.

10th. July, 1852.

DEAR SIR: I have the highest opinion of the "Palmer Leg," and shall be very happy if you can extend the benefit of it to Mr. Hixson. Its merits are so generally admitted, that I presume my opinion is wished in regard to the *particular modification of it* which was lately supplied to a patient of mine. Nothing could be more satisfactory than the ingenious contrivance for the purpose, and I therefore have great pleasure in bearing this testimony.

Very truly, JAS. SYME.

B. FRANK. PALMER, ESQ., LONDON.

The eminent Surgeons of PARIS spoke of the invention as follows, in the REPORT OF THE SOCIÉTÉ DE CHIRURGIE:

Of all the apparatus sent for examination, Palmer's excels in form, lightness and mechanism.

BARON LARREY,

Pres. of the Societe de Chirurgie, Paris.

M. DEBOUT,

Secretary Societe de Chirurgie,

M. ROUX,

Surgeon to Hotel Dieu, Paris.

M. LALLEMAND,

Member of the Academy of Sciences, &c.

M. VELPEAU,

Surgeon to Hotel Dieu, Paris.

FRENCH SYSTEM OF SURGERY;

BY ALF. A. L. M. VELPEAU;

[With Notes and observations, by VALENTINE MOTT, M. D., Emeritus Professor of Surgery in the University of New York; and additions, by GEORGE C. BLACKMAN, M. D., Professor of Surgery in the Medical College of Ohio, 1851.]

Artificial Limbs.—After a patient has submitted to an amputation of his limb, he very naturally inquires of the surgeon, what is the best substitute he can suggest for him, and we know that this question has often given rise to much

perplexity. As to the lower extremity,* we now have it in our power to furnish every desirable information upon this point, and for this we are indebted to Mr. B. Frank. Palmer, the inventor of the artificial leg which has won the admiration of the most prominent surgeons in Great Britain, France, and this country.

During the Great Exhibition in London, 1851, we had an opportunity of inspecting the large number of artificial limbs there presented, and we know that there was but one opinion as to the vast superiority of Mr. Palmer's invention to any hitherto offered. In a word, Mr. Palmer bore away the palm, the adjudicators being, among the rest, no less than the distinguished surgeon of *St. Bartholomew's Hospital*, Mr. William Lawrence, and the renowned veteran of the *Hotel Dieu*, Roux, recently deceased. This, certainly, is one of the greatest triumphs of American ingenuity.

We copy from a pamphlet issued by Mr. Palmer, the description of its peculiarities, remarking, at the same time, that through his politeness and liberality, we are enabled to present to the reader an internal view of this beautiful piece of mechanism. *We also insert the views of Mr. Palmer, which have special reference to the comfort and usefulness of the mutilated.* [Here followed five pages on the subject.]

*(The arm not invented till 1857).

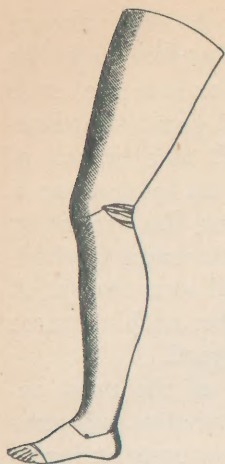
THE AMERICAN SYSTEM OF SURGERY.

(Pp. 646 to 649, Vol. I, 1856.)

By S. D. GROSS, M. D., LL.D.,

Professor of Surgery in the Jefferson Medical College, Phila.

Great improvement has of late years been effected in the construction and adaptation of artificial limbs, and there is reason to believe that the inconvenience and suffering occasioned by their use, are more frequently attributable to the misconduct of the surgeon, than to the want of skill on the part of the manufacturer of the substitute. It has been



only within a comparatively recent period that operators have hit upon the correct principles of making good and serviceable stumps. Allanson, nearly three-quarters of a century ago, understood the subject much better than it has been understood since, if we except the last *ten or fifteen years*. He strongly insisted upon a long and well-shaped stump, and exerted himself with great ability, but in vain, to induce the profession generally to follow his example. The happy changes which have lately been introduced into this department of operative surgery, are, I be-

lieve, mainly due to the manufacturers of artificial limbs, who, with an ingenuity and a perseverance worthy of so good a cause, have reduced the whole process to one of principles founded upon the study of anatomy and mechanical philosophy. It would be difficult to conceive of any apparatus more beautiful in its construction, or more admirably adapted to the end proposed, than the artificial substitutes of Mr. Palmer, of this city, who obtained the prize medal at the Great Exhibition in London, in 1851. Combining lightness with strength, and neatness with symmetry, they are worn with great comfort and satisfaction, and are apparently as perfect as any piece of human mechanism of the kind can well be made. * * * *

I subjoin Mr. Palmer's instructions for the formation of suitable stumps in amputations of the leg and thigh, as they are now generally acted upon by the more accomplished operators of the country. [Here followed the New Rules.]

The Medical and Surgical Reporter, Philadelphia.

SURGERY—COMPENSATORY ART.

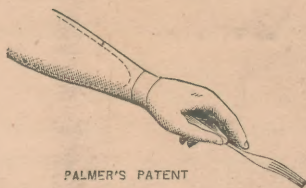
It is comparatively few years since attention has been specially directed to mechanical surgery. A comparison of the bungling, clumsy surgical appliances used years ago, with those now in common use, will show how rapidly improvements have been introduced and adopted, and how

vastly simplified are all the processes of mechanical surgery. The " wooden peg " was the best artificial leg known in the time of Ambrose Paré. This unsightly excrescence gave place to the Anglesea, and the latter to still greater improvements, until such is the perfection which this branch of mechanical surgery has now reached, that an inexperienced observer will find it difficult to decide, from the symmetry of the limbs and the perfection of their movements, which is natural and which is artificial. It would seem that in all essential particulars invention could produce nothing more perfect or better fitted for the purpose designed.

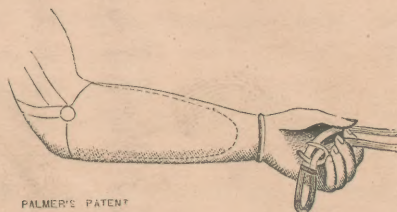
Humiliating as may be the fact to one of the most enlightened professions of the age, it is nevertheless *indisputable* that this branch of surgery owes its perfection to an inventor who, at the time of making the invention, had not received the *summum bonum* of professional honors. However much a knowledge of the principles and practice of the surgical art may aid in perfecting an artificial limb, however broad and inviting and open the field has been for gathering new laurels and new honors to our noble profession. Dr. Palmer has not only produced the *best artificial limb in all respects* the world has ever seen, but he has *also revolutionized*, confessedly, the *practice of amputations*, especially of the pedal extremities. To-day, in our standard works upon surgery, and in the practice of our hospitals, "*Palmer's place of election*" is the recognized law of amputations. First enunciated in 1846-7, opposed vehemently by leading surgeons, his suggestions have reached the altitude of a decision from which no one appeals, in which all now acquiesce.

One of the triumphs of the age in which we live is consummated by the combined skill, art, and experience of the surgeon and the surgeon-artist; the regular practitioner of surgery and him who has reached his honorable title* and position by the worth and beauty of his valuable and artistic invention. A mutilated arm or leg need be a deformity no longer. The surgeon-artist will supply the deficiency so completely that close observation will be required to recognize it.

[*The Honorary degree of Doctor of Laws was conferred on Dr. Palmer by the Western University of Pennsylvania.]



NEW SAFETY-SOCKET ARM.



MECHANISM PERFECTED, APRIL 15, 1874.

